

ANGLIA RUSKIN UNIVERSITY

FACULTY OF HEALTH, EDUCATION, MEDICINE AND SOCIAL WORK

A CASE STUDY EXPLORATION OF THE ADOPTION OF AN ELECTRONIC ONGOING ACHIEVEMENT RECORD FOR NURSING STUDENTS' PRACTICE ASSESSMENT.

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A thesis in partial fulfilment of the requirements of Anglia Ruskin University for the degree of Doctor of Philosophy

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ANGLIA RUKIN UNIVERSITY

ABSTRACT

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DOCTOR OF PHILOSOPHY

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SIAN SHAW

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In the United Kingdom student nurses are required to complete half of their undergraduate degree in clinical placement supervised by a mentor. It is a requirement of the practice assessment process that student nurses track and document their learning in clinical practice against regulatory requirements in an ongoing achievement record (OAR) to achieve registration with the Nursing and Midwifery Council upon completion of their degree.

To date, few empirical studies have examined student nurses' adoption of an electronic version of the OAR from the perspective of all users. This study examines how the electronic ongoing achievement record (eOAR) was adopted across the community of nursing practice. The research aimed to explore the challenges of adopting the eOAR from the perspective of student nurses, mentors and academics and to determine what, if any, benefit digital practice assessment can provide.

A single intrinsic case study using a sequential mixed-methods approach was adopted to capture the richness of participants' self-reports of their experiences regarding interactions with the eOAR. In strand one, data were collected and analysed from the first cohort of students who used the eOAR during the second and third year of their degree in two focus groups (n=10), a student 1:1 interview (n=1) and tutor 1:1 interviews (n=6); this qualitative data were thematically analysed using Braun and Clarke's (2006) six stage framework. In strand two, student engagement data (n=157) from the MyProgress app was examined to determine when formative and summative assessment were completed. In strand three, a survey of mentors (n=62) developed from the analysis of data collected from the student focus groups and academic interviews was undertaken.

The research presents an original contribution to knowledge by providing a comprehensive contextual understanding of the adoption of an eOAR by student nurses, academics and mentors. It reveals the interdependency between the dualities of participation and reification on the legitimacy of student nurse practice assessment. It also revealed that using the eOAR improved interconnectivity between academics, students and mentors, resulting in increased active participation by mentors and academics throughout the assessment process and

more timely competition of assessment, particularly formative practice assessment. The study also identifies a connection between ease of reification and legitimacy of the eOAR. A taxonomy of specific skills required for digital practice assessment using an app was developed.

Keywords: Electronic ongoing achievement record, student nurses, education, practice assessment, case study.

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Glossary of Terms

ALPs	Assessment and Learning in Practice Settings (ALPs) programme led by five Yorkshire Universities between 2005 and 2010 to meet their specific needs for practice assessment.
ARU	Anglia Ruskin University
BSc (Hons)	Bachelor of Science (Hons) Nursing Programme
CAQDAS	Computer-assisted qualitative data analysis software
CoP	Community of Practice
CPD	Continuing Professional Development
CUH	Cambridge University Hospital
eOAR	Electronic Ongoing Achievement Record (Electronic version of the OAR used by student nurses at Anglia Ruskin University).
ePAD	Electronic Practice Assessment Document. An updated and improved version of electronic practice assessment released in Sept 2020. The ePAD replaced the eOAR.
EU	European Union
FHEMS	Faculty of Health, Education, Medicine and Social Work (at Anglia Ruskin University)
GDPR	General Data Protection Regulations
HEE	Health Education England
HEI	Higher Education Institution
HEFCE	Higher Education Funding Council for England
HFP	Health Foundation Partnership
ID	Identification
iOS	An operating system used for mobile devices manufactured by Apple
IT	Information Technology
JISC	Joint Information Systems Committee
Μ	Mentor
Mentor	An NMC mentor is a registrant who, following successful completion of an NMC approved mentor preparation programme – or comparable preparation that has been accredited by an AEI as meeting the NMC mentor requirements – has achieved the knowledge, skills and competence required to meet the defined outcomes. A mentor is a mandatory requirement for pre-registration nursing and midwifery students.
MyKnowledgeMap	A commercial company who developed the MyProgress app which hosted the eOAR.
MyProgress	The App developed my MyKnowledgeMap which hosted the electronic ongoing achievement record (eOAR).
NHS	National Health Service

NMC	Nursing and Midwifery Council
NMC Teacher	An NMC teacher is an NMC registrant who, following successful completion of an NMC approved teacher preparation programme, has achieved the knowledge, skills and competence required to meet the NMC defined outcomes of stage 4 of the developmental framework. The NMC teacher standard is mandatory for those nurses and midwives based in higher education who support learning and assessment in practice settings for students on NMC approved programmes.
OAR	Ongoing Achievement Record. A regulatory assessment requirement of the NMC for student nurses within the 2008 framework.
PAD	Practice Assessment Document – paper version of the OAR used by student nurses at Anglia Ruskin University
PEC	Practice Education Committee
Personal Tutor	A nurse academic in HEMs responsible for supervising and supporting a group of 25- 30 student nurses (in theory and practice), for the duration of their three-year course.
PhD	Doctor of Philosophy
RAG	Red, Amber, Green (A quality assurance tool to evaluate the quality of the mentor feedback provided for students in placement)
RCN	Royal College of Nursing
RePAIR	Reducing Pre-Registration Attrition and Improving Retention
SFG	Student focus group
Sign-off mentor	A sign-off mentor is a mentor who has met additional criteria and who makes the judgement as to whether or not a student has achieved the required standards of proficiency for safe and effective practice for entry to the NMC register (NMC, 2008). In addition, they must be designated as a sign-off mentor on the local register of mentors. A sign-off mentor must be on the same part and field of practice as that the student is intending to enter.
S	Student
SID	Student identification
SPSS	Software Statistical Package for the Social Sciences
Т	Tutor
UK	United Kingdom
UKCC	United Kingdom Central Council for Nursing, Midwifery and Health Visiting

Copyright Declaration

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Overview of the Thesis

Aims of the research

This thesis explored the introduction of digital practice assessment into a Community of Nursing Practice in England. The intent was that, in gaining an in-depth understanding of the case, I would make a significant contribution to knowledge that will enable inferences to be made that will be valuable to support others when implementing similar innovations. I led the innovative development of digital practice assessment at Anglia Ruskin University (ARU) and was one of the first to do this within a major higher education course, created assessment tools with the platform developers and have shared this nationally and internationally. This bounded case study explores the adoption over two years through the study of one cohort of 157 undergraduate student nurses (adult, child and mental health pathways), their mentors and personal tutors. The objectives of this research were to.

- Explore the challenges of adopting the eOAR through the application of Wenger's theory of communities of practice (1998) and Lave and Wenger's theory of situated learning.
- Develop an understanding of how the eOAR was adopted as a pedagogical tool by the nursing community of practice (students, mentors and academics) and provide a basis of evidence-based understanding for other educators.
- Determine what, if any, benefit digital practice assessment can offer the nursing community of practice.

Organisation of the thesis

Chapter 1 sets the context for the research, commencing with an overview of the contemporary history of nurse education and the underpinning political environment. The ongoing achievement record, a regulatory requirement for assessing nursing students in practice, is introduced. The problems with practice assessment are identified from the literature, including the theory-practice divide, inadequate support for students and mentors in practice, grade inflation, failure to fail students, high rates of student nurse attrition and

delays in completing practice assessment. The reader is also introduced to the researcher and the learning landscape in which the research was undertaken. Finally, the drivers for digital innovation in the NHS are presented.

Chapter 2 commences with an exploration of the literature around cognitive apprenticeships, communities of practice and legitimate peripheral participation and how these theories apply to student learning and the adoption of the electronic ongoing achievement record within the community of nursing practice.

The second half of the chapter provides a critical evaluation of the research undertaken evaluating the introduction and use of digital practice assessment of student nurses. Finally, barriers to introducing an eOAR are reviewed and the potential benefits explored.

Chapter 3 outlines the research methods and methodology. The philosophical perspective is discussed with its relationship to the research methodology and methods. The rationale for using case study research and a mixed-methods approach is argued. Concerns about the limitations of case study research, rigour and ethics are addressed. The bounded context of the research is drawn. The data collection methods are described; student focus groups, mentor survey, MyProgress data analytics and tutor 1:1 interviews.

Chapter 4 introduces the data analysis process; the analytical framework described in this chapter was designed to answer the research questions. Key epistemological and methodological influences that shaped the data analysis process are critically discussed.

Chapter 5 is the first of four results chapters. In all the results chapters, a process of complementarity (Creswell and Plano Clark, 2017) was undertaken in which the data from the different groups in the social system, collected using various methods, were compared to develop a complete multifaceted understanding of the case. This chapter focuses on the first two research questions.

- What was considered a legitimate practice in completing the student nurse paper version of practice assessment documents (PAD)?
- Was there divergence from legitimacy identified by the personal tutors and, if so, what was the nature of this divergence?

Chapter 6 focuses on the start of the journey in introducing the eOAR and is directed towards analysing the data around the education of the mentors, students and tutors in the use of the eOAR and how this helped or hindered the success of the innovation.

This chapter focuses on addressing the third research question.

Why was digital practice assessment difficult to introduce in the learning landscape?

A role reversal emerged in which the student became the expert teaching the mentor how to use the app. It also emerged that younger mentors (20-30s) were more likely to struggle with using the app because they were less likely to attend training.

Chapter 7 converges the data from students, mentors and academics on the challenges encountered in the 'messy lowlands' (Schön, 1987) in executing the change to the eOAR from the paper PAD and continues to address question three.

• Why is electronic practice assessment challenging to introduce in the learning landscape/community of practice?

Barriers that emerged included software, hardware and the digital literacy of mentors, students and academics, tablet storage in placement and data protection concerns.

Chapter 8

This chapter outlines the journey to achieving legitimacy in adopting the electronic ongoing achievement record (eOAR). It explores how mentors, students and academics made the platform used for practice assessment habitable; the community of practice developed new ways of working in completing the practice assessment. Making the eOAR legitimate had different meanings for mentors, students and academics, which aligned to benefits for different sections of the community.

Chapter 9 highlights some positive impacts of the eOAR, including ensuring student nurse formative and summative assessments were completed on time and environmental benefits.

Chapter 10 is a theoretical discussion of the research findings. Its focus is on exploring the findings in relation to Wenger's (1998) social learning theory. There is a contribution to new knowledge in understanding how theoretical concepts of alignment, constellations of practice, brokering and imagination were entwined in the journey towards the adoption of the electronic ongoing achievement record into the community of practice.

Chapter 11 Summarises contributions to new knowledge, including the influence of the duality of participation and reification on student nurse practice assessment and identification of a taxonomy of specific digital learning skills users of app-based practice assessment need. This chapter also summarises the research, highlighting its strengths and limitations. Recommendations for practice and research are made. The chapter also outlines the impact of the study within Anglia Ruskin University and Nationally within the UK.

Chapter 1: Introduction and Background

1.1 Introduction

This chapter develops a rationale for research into adopting electronic practice assessment of student nurses. It commences with a précis of the contemporary historical and political context of nurse education. The middle section describes the ongoing achievement record (OAR) and its function in student nurse practice assessment. The OAR is contextualised within the regulatory framework that shaped its format and how it was used in practice for student nurse assessment and the role of the mentor in assessing and supporting students in placement. The reader is introduced to the education provider and placement areas in which learning was undertaken in this case study. The reader is also acquainted with the researcher. Finally, the state of technological development within the NHS is outlined.

1.2 The contemporary evolution of nurse education in the UK

The Nurses Registration Act of 1919 established the General Nursing Council (GNC) for England and Wales, as well as the Scottish and Northern Irish GNCs. The Act resulted from a campaign led by Ethel Fenwick, matron of St Bartholomew's Hospital. Ms Fenwick fought for nursing's professionalisation. From 1919 to 1983, the GNC was responsible for maintaining a register of qualified nurses and served as the profession's disciplinary authority (Bendal and Raybould, 1998). Eventually, the GNC also assumed responsibility for approving training courses for State Registered Nurses and later, Assistant Nurses, as a result of the Nurses Act of 1943, which mandated registration. By the Nurse Amendment Act of 1961, the Assistant Nurses were renamed State Enrolled Nurses (SENs).

In March 1970, the Department of Health and Social Security established a committee to examine the role and education of nurses and midwives. The committee's recommendations were published in the Briggs Report (Committee on Nursing,1972). The report proposed two levels of training, leading to two grades of nurses. It recommended that initial nurse training should be based on a modular system, beginning with a generic 18-month foundation course that included experience in general, psychiatric, community and hospital nursing leading to a

certificate in nursing. The Briggs Report also recommended that nursing should develop its body of knowledge based on research. Another important recommendation was that one statutory body be responsible for education and training standards and the discipline and registration of nurses and midwives in the UK, with four separate boards in England, Scotland, Wales, and Northern Ireland. This statutory body would replace the nine existing bodies across the UK. In 1983, following the Nurses, Midwives and Health Visitors Act (1979), the United Kingdom Central Council for Nursing, Midwifery and Health Visiting (UKCC) was established. The General Nursing Council was one of the nine bodies the UKCC replaced. A new professional register was set up with four nursing specialities (mental health, children, learning disability and adult) (Le Var,1997a). According to the 1979 Act, the English National Board (ENB) was responsible for providing or arranging the provision of courses leading to registration as nurses or midwives and for collaborating with the UKCC to promote improved training methods.

Prior to the establishment of the UKCC, there were efforts to improve the quality of nurse education. The first pre-registration nursing degree was established at the University of Edinburgh and in 1960. The University of Wales, Cardiff, followed in 1972 (Bircumshaw and Chapman 1988), the University of Manchester commenced the first pre-registration nursing degree course in England in 1974 and the University of Ulster, Northern Ireland followed in 1976 (Carpenter, et al., 2012).

While the number of nursing degrees offered by universities increased throughout the 1980s, nurse education remained largely based on an apprenticeship model, with schools of nursing affiliated to hospitals delivering knowledge about nursing practice. During a three-year programme, student nurses completed four summative assessments in practice: aseptic technique, total patient care, medicine round, and shift leadership (Vinales, 2015). In this apprenticeship model, it was believed that the student acquired competence through on-the-job training. In reality, qualified nurses frequently lacked the time to pass on their knowledge and skills and students were utilised as an extra pair of hands (Fretwell, 1980; Ogier 1981: Orton, 2011).

The move of nurse education to higher education institutions was initiated by the Royal College of Nursing commission for nurse education and its report - the Judge Report (RCN 1985). The RCN commission was concerned about the large number of student nurses requiring placement supervision and the 15 to 20 percentage attrition rate. The UKCC

established a Project 2000 action group, which included members from the National Boards. In February 1987, the action group submitted recommendations for the future of nurse education to the Government (Le Var, 1997a). The Government conditionally accepted the proposals in May 1988 (DHSS, 1988). Principal proposals included a registered practitioner to provide care in hospital and community settings, a three-year course with a common foundation programme with branches in four fields of nursing (Adult, Child, Mental Health and Learning Disability), followed by 18 months focusing on the nursing speciality of choice. The new course emphasised health promotion more heavily. Students would receive a nonmeans tested bursary. The recommendations also included the supernumerary status of students, closer ties to higher education, graduate teachers, the development of a new helper grade, and the discontinuation of enrolled nursing training (UKCC 1986). Concerns about the number of young adults available for recruitment into the profession also promoted this radical change in nursing education (National Audit Office, 1992).

In January 1989, the ENB issued guidelines for institutions to develop project 2000 courses (ENB, 1989). The first project 2000 course was validated by the HE institutions and the ENB as a HE Diploma in September 1989 (Le Var, 1997b). Five waves of Project 2000 implementation spanned five years. The first thirteen demonstration sites adopted project 2000 in 1989/90 (Macleod Clark and Maben, 1998). The fifth wave concluded in 1993/94 (Jowett, Walton and Payne, 1994). Upon completion of project 2000 courses, students received a Diploma in Nursing pertinent to their field. Scotland and Wales opted for a longer planning period after the 1988 decision to implement the new programme. In Scotland, the first Project 2000 course began in August 1992 and by October 1992, all colleges had enrolled their first students. By April 1992, all four newly constituted nursing and midwifery colleges in Wales had initiated Project 2000 (National Audit Office, 1992).

In addition, the ENB mandated that, beginning in 1995, all newly appointed nurses, midwives and health visitor teachers must be graduates (ENB, 1996). In 1995, enrolled nurse training was discontinued. Existing ENs were given the opportunity to transition to first level nurses (ENB, 1991).

In 2002, all UKCC statutory functions were transferred to the Nursing and Midwifery Council (NMC), along with the quality assurance function of the ENB; the ENB was abolished. The Nursing and Midwifery Order (2001) mandates that the NMC establish and publish standards and guidance for pre-registration nursing education. These requirements align

with the European Directive 2005/36/E.C. (Council regulation (EU) 2005/36, 2005) 'Recognition of professional qualifications '. The Nursing and Midwifery Council (NMC, 2008) governs the Nursing, Midwifery and Nurse Associate professions. Its primary responsibility is to safeguard the public's health and wellbeing by maintaining a register of nurses eligible to practice within the United Kingdom and by setting standards for their education, training and conduct, performance and ethics.

The approval of project 2000 by the then Secretary of State for Health, Sir William Waldegrave (DHSS 1988), paved the way for nurse education to transition from certificatelevel delivery by approved schools of nursing, to diploma-level or above provided by higher education institutions. In 2009, the Department of Health announced that nursing would become an all-graduate profession (Kings Fund, 2020) so nursing students are now educated at universities. Changes to the standards of pre-registration nursing education programmes (Nursing and Midwifery Council, UK, 2010) resulted in transferring all new courses to undergraduate level in September 2012, with successful candidates receiving a degree. This action reflected the expanding responsibilities of nurses.

Since 2013, to become registered with the NMC as a nurse, all students must complete a university based NMC approved bachelor's or masters level programme in their chosen branch (adult, child, learning disabilities or mental health nursing). Upon completion of the programme, the student is awarded both a degree and professional registration. All pre-registration courses must be 4,600 hours long, with theory and clinical placements (including community and hospital) distributed equally (NMC, 2010, NMC 2008).

New education and training standards for nursing came into force in 2019 (NMC, 2018a). Consequently, the findings of this case study must be considered in light of the recent regulations.

The contemporary history of nurse education is summarised in figure 1 below.



Figure 1 Contemporary history of nurse education in the UK

1.3 Practice assessment of student nurses

Student nurses are exposed to both clinical and theoretical learning. Clinical practice and rigorous placement assessment strategies are required to ensure the student nurses' 'fitness to practice'. Courses preparing nurses for entry to the professional register ensure that student nurses achieve the learning outcomes outlined in the curriculum to the required standard of quality and safety in patient care via robust assessment of practice (Willis, 2012).

Within their clinical placements, the students in this case study were supported by mentors (qualified nurses who have undertaken additional preparation in clinical education) (NMC 2008). The mentor facilitated, guiding and assessing the students' learning and enhancing their professionalism (Öhlén and Segesten, 1998; Pramila-Savukoski, et al., 2021). It has been demonstrated that mentors play a crucial role in the education of student nurses (Hilli, et al., 2014, McIntosh, et al., 2014, Jokelainen, et al., 2011). However, being a mentor was not always viewed as a 'badge of honour' (Willis, 2015) as qualified nurses frequently felt obligated to be a mentor due to the increase in student nurses.

In addition, in 'Raising the Bar' (Willis, 2015) registered nurses reported inconsistent support for practice-based learning and a failure to recognise the importance of the mentor role in the educational process. Evident from this report is the importance of high-quality, practicebased education in preparing future registered nurses.

Mentors were required to demonstrate their knowledge, skills and competence continually. Each mentor underwent a triennial review to ensure that only those who met the mentor/practice requirements remained on the local mentor register (Nursing and Council, UK, 2008). To prepare for their summative assessment at the end of the module, the student nurses received ongoing formative assessment and feedback from their mentors during their clinical placements. Failure of the practice module could result in failure in the course and expulsion from the educational programme (Wallace, 2003; Hand, 2006; Duers and Brown, 2009). Clinical instruction and assessment are fifty Perce of the nursing curriculum.

1.4 Contextualising the ongoing achievement record within the regulatory structure.

The student nurses included in this case study research were governed by the NMC 2010 'Standards for pre-registration nursing education'; the framework discussed in this thesis is therefore based on these standards and not the more recent 'Standards for pre-registration nursing programmes' (NMC, 2018a). Nonetheless, many of the findings are still relevant for courses governed by the current framework, as student nurses continue to complete 2300 hours of clinical placement during the course. The successful completion of an OAR remains a requirement for NMC registration as a qualified nurse, even though the assessment criteria have changed. The findings may apply to other professional or vocational programmes that incorporate placement practice assessment. All NMC approved Education Institutions and their practice partner learning providers must comply with the appropriate NMC standards for all UK pre-registration programmes and demonstrate that all the requirements have been satisfied.

In this study, the students were required to meet the NMC (2014) standards of competence for registered nurses. These standards include a competency framework, which specified the knowledge, skills and attitudes that student nurses must possess upon completion of their degree-level course. These competencies were organised into four domains including generic and field specific skills.

- professional values
- communication and interpersonal skills
- nursing practice and decision-making and
- leadership management and team working



Figure 2 Framework for PAD: NMC Standards for pre-registration nursing education (2010)

Figure 2 above summarises the contents of the PAD. Central to the OAR construction was the then current NMC code of professional standards and behaviour (2015) which is discussed in the next section.

Student nurses in all fields (Adult, Child, Mental Health and Learning Disability) needed to show achievement of all four domains to qualify and maintain these standards of competence throughout their careers to remain on the NMC register of active practitioners. Students moved through progression points at the ends of year one and year two of their degree by acquiring essential skills and competencies. Before graduating, student nurses were required to demonstrate they could apply knowledge and skills against set criteria using the best available evidence. These criteria were safety and five essential cluster skills outlined in Annex 3 of the Standards for Pre-Registration Nursing Education (NMC, 2010)

- organisational aspects of care
- infection control
- nutrition and fluid management
- medicines management.
- care, compassion, communication

The skills clusters supported the attainment of competency standards. Student nurses were also required to demonstrate their adherence to professional values outlined in The Code: Professional standards of practice and behaviour for nurses and midwives (NMC 2015). In conjunction with the skills and knowledge criteria, the competency framework served as the student nurse's ongoing achievement record (OAR). The NMC 2010 Standards stipulated that the OAR was a fundamental component of all undergraduate nursing programmes within England and Wales. At Anglia Ruskin University, the OAR was distributed as a series of paper documents, one for each year of the course. These paper documents were known as the Practice Assessment Document (PAD).

The OAR, which included comments from mentors, was passed from one placement to the next to enable judgments on the student's progress. Students were expected to record their learning experience in practice by identifying evidence to support the achievement of NMC outcomes and competencies. This record was required to be made available to the student's named mentor at the start of each new placement in order to facilitate discussion of the student's strengths and areas for improvement. To achieve these competencies, student nurses were supervised and assessed in practice by a mentor who had completed specific training for this responsibility. Other inter-professional team members who were suitably prepared could contribute to the assessment. During at least 12 weeks of practice towards

the conclusion of the programme, a sign-off mentor (a nurse mentor who has met additional criteria), registered in the field of practice that the student intended to enter, made a final determination of competence (NMC, 2008).

Our experiences at Anglia Ruskin University with the existing paper PAD had revealed many shortcomings. If lost, it was difficult to replace; personal tutors were unable track student progression efficiently or quickly engage with mentors while the students were in placement. It was necessary for students to bring their record to the university or for their personal tutor to visit the student and mentor in their place of employment in order to review their PAD. At least once per 12-week placement, an academic team member visited each student. ARU needed to provide mentors and students with better, more responsive support for practice assessments. In addition, maintaining a record of each students' PAD was not always robust, as it required photocopying or scanning the documents. Discussion with colleagues revealed inconsistences in the location and storage of the students' practice records across the three university campuses (Cambridge, Chelmsford and Peterborough). Student nurses complained that paper-based practice assessment was cumbersome (McMullan, 2008). weighing between 0.5 to 1.5kgs (Timmins and Dunne, 2009). Governance issues arose because the length of the document masked incomplete or sub-standard records (McMullan, 2008). Educators could be overwhelmed by checking that the record was complete (Timmins and Dunne, 2009). Signatures of mentors on PAD assessments were susceptible to forgery and it was possible to cheat.

The NMC stipulates that 50% of the pre-registration nursing programme (2300 hours) must be spent in practice in a variety of settings (NMC, 2010; NMC, 2018a). Learning occurs in diverse environments, in widely dispersed locations, in a variety of National Health Service, independent and non-profit sectors. It was also possible to undertake some aspects of the programme outside the UK. An electronic version of the OAR must operate effectively in any environment, including those with obsolete technology, poor Wi-Fi connectivity, or no access to computers or the internet.

1.5 What are the issues with the assessment of competence of student nurses in practice?

In the following section, the well-documented issues with the assessment of student nurses in practice are discussed.

1.5.1 The theory-practice divide.

The 'theory-practice divide' is a metaphor for a complex issue in nursing education, but there is no consensus regarding its definition. In a concept analysis, Greenway, Butt and Walthall (2019) created a diagrammatic representation of the term with three distinct units: antecedents, attributes and consequences. Antecedents to the theory-practice divide are a conflict between university taught evidence-based practice, placement-based ritualistic practice and the teaching and acquisition of nursing skills. Relationship difficulties between clinical practice and universities, the failure of clinical practice to reflect theory and the perception that theory is irrelevant to clinical practice are characteristics of the divide. The consequences are that student nurses are unable to provide the evidence-based care they were taught at university. The issue with Greenway, et al.'s concept model is that it fails to represent the challenges nurses face in practice and the complexity of practice, resulting in rote care. Due to competing demands and staff shortages, nurses frequently choose the guickest method of care delivery. McCaugherty (1991) believes that no matter how excellent academic education is, it will never fully accommodate the multifaceted, ever-changing nature of practice and a divide will always exist. This raises the question of what is assessed as a competent practice. Is it the evidenced-based care that student nurses are taught at university or ritualistic practice?

These ethical issues faced by nurses are what Schön (1983: p.42) refers to as the swampy lowlands in which 'situations are confusing messes incapable of technical solution.' When proposing a digital solution for recording the practice assessment of student nurses, one must heed Schön's caution. The solution must function within the context it will implemented, outside the high ground of academic practice in the lowlands of clinical placement with webs of uncertainty.

In 2008, when the NMC (2010) announced that the minimum academic level for entry to the nursing register would in future be a bachelor's degree, the debate surrounding the separation of academia and practice areas and its impact on the education of nursing intensified. The NMC reasoned that nursing must become a profession in order to meet care delivery needs in a healthcare system that requires practitioners to be adaptable, responsive and highly skilled. The key to this transformation was a shift toward greater professionalism and technological advancement to meet the needs of both individuals and populations. The gap between theory taught in educational institutions and the practice within clinical placements is not new, but many argue that transferring nurse education to higher education cemented this dichotomy because learning takes place in two separate institutions (Ferguson and Jinks, 1994; Hewison and WIldman, 1996; Landers, 2000).

Willis (2012) addresses the persistent fears of the public and sometimes nurses themselves that the shift to higher education has caused nurses to be less caring, stating that no such accusations are made of doctors or other professions. In contrast, a growing body of evidence indicates that degree-level education has a positive impact on the delivery of highguality care and protects patient safety and wellbeing. Aiken, et al. (2014) discovered that the probability of an inpatient dying within 30 days of admission decreased by seven per cent for every ten per cent increase in the proportion of registered nurses with a bachelor's degree. In the study, control models were used to measure associations, thereby regulating unmeasured differences in mortality across countries and for measured differences across patients and hospitals. Nevertheless, there may still have been some unmeasured differences and confounding factors at the individual, hospital and community levels. The findings of this study show that surgical patient mortality and failure-to-rescue rates are reduced when a high proportion of nurses hold bachelor's degrees or higher. This review corroborates findings from smaller European studies indicating that improved nurse staffing is associated with decreased inpatient mortality (Jarman, et al., 1999; Rafferty, et al., 2007; Van den Heede, et al., 2009 and Schubert, et al., 2012).

When in September 2013 all UK pre-registration all nursing programs were mandated to deliver at degree level, there were consequences. One impact was the physical separation of students from the placement areas as students moved into universities. The shift to a graduate-only profession has led to growing unease (Brown and Edelmann, 2000) regarding
the 1990s education reforms (United Kingdom Central Council for Nursing, Midwifery and Health Visiting, 1986).

In my role as a personal tutor and link lecturer, I noticed the limitations of paper-based assessments in bridging this separation and providing adequate support for students and mentors participating in professional practice assessment. How could Anglia Ruskin effectively monitor the development of competence among approximately 1500 student nurses in over 500 placement sites? Paper records are inefficient for collecting, storing, analysing data and monitoring student progress. For tutors to track their students' progress in practice and view their PAD, they had to visit the student in practice or have the student schedule a tutorial with them on campus; this is both time consuming and incurs costs in travel expenses. This assessment process hindered teacher-student engagement and the ability to identify students who required support and intervention quickly to prevent attrition. I believed that there must be a more effective method of assessing students in practice and for fostering collaboration among academics, mentors and students in the process.

Roberts and Williams (2017) advocate mobile technology to improve connections between placements areas and universities; the ready access to information can promote research uptake and provide an immediate and non-threatening connection to academics (Chinn, 2015).

1.5.2 The assessment process in practice and mentor support.

A literature review commissioned by the RCN (Bazian Ltd, 2016) revealed problems with mentorship resource allocation. Insufficient protected time was available to complete assessments (Čuk, et al., 2014, McIntosh, et al., 2014). In a focus group analysis, Cassidy (2009) discovered that mentors lacked sufficient time to complete assessments. According to Butler, et al. (2011) more than half of mentors allot less than 30 minutes for the formal interview process and struggle to comprehend the language employed in the competency assessment document.

Mentors require assistance and training to enhance their proficiency in the role (Mikkonen, et al., 2022, Tuomikoski, et al., 2020). The need for additional support could be because of the lack of clarity regarding the concept of competence (Dolan, 2003; Fitzgerald, Gibson and Gunn, 2010; Bradshaw, et al., 2012) and students' and mentors' inability to understand the language used in the assessment document. In addition, Miller's (2010) literature review revealed that competency assessments frequently fail to define what is expected of students and that mentors avoid discussing the more difficult areas of practice instead focusing on the students' strengths.

Cassidy (2009) also reported that mentors' confidence in their ability to carry out the practice assessment was varied and depended on subjective judgments when undertaking the competence assessment of student performance. Subjectivity in assessment persists despite Brown (2000) highlighting a decade ago that mentors' evaluation decisions are significantly influenced by students' personal characteristics and are not limited to the achievement of the learning outcomes. McCarthy and Murphy's (2008) quantitative survey-based study of 470 Irish nurses revealed that many mentors were inexperienced, did not fully comprehend the assessment process and did not implement all the recommended assessment strategies. Foster, Ooms and Marks-Maran (2015) conclude in their review of the literature on student nurses' expectations and experiences of mentors that universities must investigate better ways to support mentors in their role.

Calman, et al. (2002) report that even though all nurse education providers offered preparation courses for practice assessors (ranging from two days to three months), there was inconsistency in the methods used to evaluate students' progress toward achieving competence. However, Benner's (1984) theoretical framework of novice to expert development was widely used. In addition, they report that assessment was subject to subjective bias, failing students were given additional time in clinical areas to demonstrate competence and that students rarely failed. In addition, assessments were frequently written in the final minutes of the clinical placement, if at all, with mentors sending the completed assessment to students after they had left the clinical placement.

The RePAIR (Reducing Pre-registration Attrition and Improving Retention) Project (HEE, 2018b) confirms that several aforementioned problems with placement assessment persist. The project report documents a lack of placement support for students, with mentors frequently not working the same shift. A quarter of students had difficulty completing the

practice assessment documents and 28% were unsure about the role of the sign-off mentor. The quality of clinical placements varied, as did the mentorship provided to students. In addition, there were staff shortages, low morale and a lack of placement-based instruction, which meant that students' learning was not a priority. Some students reported feeling like a burden to clinical staff, being used as an extra pair of hands, not being supernumerary or receiving adequate breaks and being used as unpaid labour. There were concerns that mentors had insufficient time to complete the PADs, did not understand how to complete them, and stayed beyond the end of their shifts to complete the documentation. The clinical placement experience was the third most prevalent reason students contemplated dropping out of their course (after finances and academic issues). In the first year, students complained of inadequate clinical or academic support. One student aptly summarises the sentiments of students.

"They leave your books until the day you finish and then complain about completing them. Some mentors really don't have a clue what to do with students."

(Adult nursing student, London and South East: HEE, 2018b, p.44).

Governance is defined by the Chartered Governance Institute UK and Ireland (2022) as 'a framework for managing organisations. It identifies who can make decisions, who has authority to act on behalf of the organisation and who is accountable for how an organisation and its people behave and perform.' It could be argued that improving governance of practice assessment may improve concordance with regulatory requirements but have little impact on the quality. It could also be argued that you cannot provide evidence of quality without good governance. Improvements in governance, for example record keeping, have the potential to improve the quality of assessment. For example, suppose students are not completing formative assessments on time; in that case, the quality of the assessment experience is poor because they do not have time to improve before they have their summative assessment. From our experience with the second eOAR implementation trial, we were able to identify how better governance of assessment could potentially improve quality. I will explain how in the next paragraph.

At ARU, the quality of mentor feedback for students was historically evaluated using a red, amber, and green rating system (RAG) by the student's personal tutor at the university (See Appendix 1). The mentor was awarded a score for the quality of the feedback by the tutor. Each trimester the Educational Champion would collate the information in the RAG for their area and provide feedback to the healthcare trust on the quality of mentor feedback. Anglia Ruskin would also send letters to mentors who achieved excellence in the quality of their assessment, thanking them. We added this RAG form to the eOAR. However, the student or mentor could not view the RAG form within the digital system. With the paper form, we could evaluate the quality of one mentor's feedback on one ward at one point in time. However, we could not guickly assess if individual mentors, wards or trusts had ongoing issues with the quality of the practice assessment. With the eOAR as the data was stored digitally, we identified that it would be possible to track the quality of feedback of particular mentors, wards/areas of practice or trusts over time. The data was easily extractable from the administration system as a spreadsheet which could be analysed. Using this data available through improvements in governance would enable ARU to identify mentors/placement areas with sustained evidence of excellence in the quality of student practice assessment for sharing across our network as exemplars of good practice. It would also enable ARU to identify areas that needed additional training and support to work with our partners to improve the quality of the assessment.

1.5.3 Grade inflation

Another recurring theme in the literature is the grade inflation of students' performance in practice, i.e., the disparity between their achievement in clinical areas and their academic performance. Seldomridge and Walsh (2006), in a study of 204 students in the United States, found that on a grading scheme where students could receive a mark between zero to four for their practice, 95 per cent achieved a level of three to four, and only five per cent were at level two.

Butler, et al. (2011) identified a lack of continuity in the assignment of mentors to students over the course of a placement. In addition, they found that mentors more frequently focus on assessing knowledge and attitudes rather than skills. Fitzgerald, et al. (2010), on the other hand, discovered an inability to provide accurate feedback on professional values and behaviours, with mentors finding it easier to evaluate clinical skills.

Donaldson and Gray (2012) reported that some academics with years of experience struggled to assign course grades correctly. Evidence suggests that limited academic experience in marking assessments or training contributes to grade inflation (Kezim, et al., 2005). Therefore, there is a possibility that mentors with limited exposure to academic assessment may struggle to assign appropriate grades. Furthermore, there is a discrepancy between what the mentors wrote about their students and the confidential feedback provided to academics that students would never see; the latter appeared to be more truthful. In their evaluation of a clinical competency assessment in a BSc Nursing programme, Fahy (2011) noted that students found it difficult to schedule time for their obligatory interviews with mentors. In turn, mentors reported that the students focused on the theory and competency document completion to the exclusion of other learning opportunities.

Others have noted the discrepancy between academic and practice grades. Paskausky and Simonelli (2014) identified a disparity of at least one entire letter grade (10 points out of 100) between students' final written exam and clinical grades in nearly 70% of student nurses (n=194). While there appears to be no published research indicating that student nurses with high clinical-grade discrepancy scores have low clinical competence or are unsafe in practice, one could argue that, theoretically, this is possible. Grade inflation is a growing concern for higher education in the UK. An advocacy organisation of 137 UK universities has identified an ongoing upward trend in first-class and 2:1 degree classification (UK Standing Committee for Quality Assessment, 2018). In response, Damian Hinds, the Education Secretary, called for action by the Office for Students (OfS) across the sector to stop artificial grade inflation (Hinds, 2019).

1.5.4 Failure to fail

Failure to fail student nurses is a common theme in practice assessment. Several studies demonstrate some student nurses can pass clinical assessments without demonstrating sufficient competence because mentors do not want to hurt students' feelings. Additionally, they worried they had personally failed if their student was unsuccessful (Duffy, 2003; Webb and Shakespeare, 2008; Wells and McLoughlin, 2014). Some mentors believe it is not their responsibility to pass or fail a student but provide constructive criticism (Yonge, Myrick and Ferguson, 2011). If a student fails their final placement, guilt and stress are amplified; moral courage is required to overcome the stress of failing incompetent students (Black, Curzio and Terry, 2014). A decade later, Hunt, et al. (2012) examined Duffy's (2003) unease

regarding failing to fail despite concerns regarding students' fitness to practice. By analysing data from 27 universities, they determined that only a negligible proportion of student nurses failed practice, with theory failures outnumbering practice failures by a ratio of 5:1. A quarter of universities had no practice failures.

We know that this issue is persistent and is international. In a survey of 561 mentors in Norway, Hauge, et al. (2019) discovered that they would give student nurses the 'benefit of the doubt' rather than failing them if they did not meet their learning outcomes - (if their practice were not unsafe). In the United States, according to Couper (2018) the assignment of a failing grade causes clinical nurses to struggle emotionally. Furthermore, some students use coercive behaviours to manipulate mentors into giving them passing grades (Hughes, Mitchell and Johnston, 2019; Hunt, et al., 2016b). To fail students, mentors need academic support and input to validate their decisions (Cassidy, Coffrey and Murphy., 2017; Hauge, et al., 2019).

Failing to fail students is concerning because it compromises public safety. Some researchers (Calman, et al., 2002; Cassidy, 2009) contend that a national framework is essential for valid, comparable assessment of students. Hunt, et al. (2012) conclude that relevant data must be collected at the national level in order to evaluate the relationship between academic and practice assessment failure. A digital platform that tracks the progress of students may serve as a means of collecting national standardised data. In the standards framework for nurse education, the NMC (2018c) acknowledged a need for a national practice assessment document and consulted on whether this document should be digital (Trotter, 2017).

1.5.5 Student nurse attrition

There is a nursing shortage in the United Kingdom, with 41,000 nurse vacancies or one in eight posts (NHS Improvement, 2018). There is a possibility that more nurses will leave the field as a result of hardships felt across the profession during the COVID-19 pandemic (RCN, 2020). Despite the Government's pledge to increase the number of nurses in training, the number of applications and acceptances for pre-registration nursing degrees in England

declined for the second consecutive year in 2018. Buchan, et al. (2019) hypothesise that this is due to a decline in the number of school leavers and changes student nurse funding. Nevertheless, since September 2020, our experience at ARU has witnessed an exponential increase in nursing course applications and recruitment. We attribute this to the 'halo' effect of COVID-19 on attitudes towards the nursing profession. UCAS (2022), the university admission service, reported a 32% increase in applications to study nursing in 2021 compared to 2020. Two-thirds of nursing applicants cited the pandemic as their inspiration for becoming nurses (UCAS 2022). The UCAS data supports our observation at ARU.

Despite the current increase in enrolment in nursing programmes, the 'attrition' rate of student nurses exacerbates the nursing shortage. Attrition is defined by Glossop (2002, p.375) as 'the difference between the number of students beginning each cohort and those who completed that cohort.' Defining attrition is complex, as some students will continue to complete their course with later cohorts and there are a variety of academic and personal reasons a student might leave. Because of the lack of a standardised definition of attrition reporting, university data is inconsistent. Student nurses' attrition nevertheless contributes to nursing shortages.

The RePAIR report (HEE, 2018b) defines pure attrition as 'the percentage of students who did not complete the programme within the standard pathway for that programme,' which for nursing courses is three years. This definition is problematic and attrition rates may be overestimated as a result. It does not take intercalation into account. Many students will pause their studies and complete the course later. There are many reasons for this, including pregnancy, leave of absence, and academic failure, necessitating retaking a module. As a result of the COVID-19 pandemic, some students who were in high-risk groups were required to shield themselves; consequently, they may not complete all their placement hours within the standard timeframe but will graduate later. RePAIR estimates that the attrition rate of students between 2013 -2014, and 2014- 2015 for student nurses was 33.35% (adult), 29.47% (child) and 34.98% (Mental Health) (HEE, 2018b:P26). The attrition rate was highest in the first year of all programmes. From 2009/10 to 2016/2017, it was determined that attrition was decreasing for all programmes of study, with the expected attrition for the cohort starting in 2014- 2015 was 14.0% (page 29), a decrease of 45% from 2009.

The RePAIR report (HEE, 2018b) highlighted that the percentage of attrition of student nurses was an estimate rather than an exact figure. The Health Foundation Partnership (HFP) and the Nursing Standard concur that the current rate of attrition is much higher (Buchan, et al., 2019). The HFP, which defines attrition as students who 'left their courses early or suspended their studies', found that student nurse attrition ranged from 5% to 50% and averaged 24% in a cohort of students expected to graduate in 2017. They hypothesise the outliers were caused by differences in HEI data reporting. The HFP directly contests the veracity of the RePAIR data (HEE, 2018b), claiming that there is 'no sign of sustained improvement in the attrition rate since 2008' (Buchan, et al., 2019, p.3). The HFP research included data from 58 of the 74 UK universities that offer nursing degrees (16,544 students), significantly more than the RePAIR study, which included only 16 universities.

The failure of any nursing student to complete their programme is costly for the student, university and the NHS. In 2020 degree course tuition fees for UK students are up to £9250 per year, in addition to the student's living costs (Times Higher Education, 2020). Each year, the student fails to complete, the university loses revenue and the NHS loses a future employee. There are also psychological, social and financial costs for the student (Wilson, Eva and Lobb, 2013).

Tinto cultivated a model of student retention that he later refined (Tinto,1997; 2012). At the core of Tinto's model is the concept of commitment, both on the part of the institution and the student. The model defines attrition as a student's inability to integrate into the social and academic systems. Therefore, increased retention could be achieved by enhancing the student's relationship with the HEI and fostering social integration. The RePAIR report (HEE, 2018b) outlines a tripartite model of commitment between the HEI, Student and Healthcare Provider (clinical placements) that is required for increased retention.

Poor placement learning experiences contribute to the attrition of student nurses. In a systematic review, Eick, Williamson and Heath (2012) identified unfavourable placement experiences and practice assessments as factors contributing to student nurse attrition. Mentors and academic tutors must provide high quality support and care to student nurses on clinical placement in order to reduce the number of students who drop out (Ten Hoeve, et

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al., 2017). Low mentor-student ratios, a delay in providing of placement-related information, inadequate facilities and onerous workloads during the placement and a lack of communication between clinical placement areas and universities have been cited as placement factors that contribute to student attrition (Hamshire, Willgoss and Wibberley, 2012; 2013; Ashghali Farahani, et al., 2017; Ten Hoeve, et al., 2017).

Part one of a two-part review by Manchester University commissioned by HEE North-West of international research within nursing and midwifery (Hamshire, et al. 2014) focused on analysing new/current interventions to reduce student nurse and midwifery attrition. Two core themes emerged: setting realistic expectations and providing support mechanisms on campus and within the placement. A student automated mobile texting service has been piloted as one such support mechanism (Boath, et al., 2016). The students (n=77) reported that the service increased their sense of belonging to the university. Boath, et al. concluded that automated phone texts or similar systems encourage retention. However, there were some unresolved issues with the cost incurred by participants when replying to text messages. An essential element to developing a sense of belonging is high quality mentoring (Royal College of Nursing, 2015).

Using digital assessment and feedback via an app offers a potential solution for improving communication between the university, mentors and student nurses in practice. Digital records provide nurse academics with immediate access to the record of student progress, allowing them to offer rapid advice and support.

1.5.6 Delay in completing assessments

Burden (2014) examined the PADS (Practice assessment documents) of student nurses in her thesis. She discovered that the documentation was frequently late. In 63.4% of cases, preliminary interviews did not occur in the first week as recommended by course guidance, with up to 30% occurring in week three or later. The PAD review revealed that midpoint interviews were being conducted beyond the recommended timeframes, with some being completed within a week of the summative assessment or signed off simultaneously. First-year students had the highest rate of late assessments, with up to 56.1% of mid-point interviews completed late. Burden notes that this could result from mentors making clerical errors by adding the dates after the assessment has occurred. However, I am inclined to

concur with her assessment that formative assessments were not completed on time. Similar anecdotal comments were made by students during my experience as a personal tutor. Students reported having difficulty convincing mentors to complete portions of their assessments. Late formative assessment does not provide the student sufficient learning opportunities prior to their summative assessment that it was intended to do.

1.6 The Context of Learning, Placement and Assessment in the Case Study

1.6.1 Anglia Ruskin University, The School of Nursing and Midwifery and its placement partners

Anglia Ruskin University is a post 1992 university. It is ranked among the top 350 institutions in the world in the Times Higher Education's 2020 league table (Times Higher Education, 2021). It is the largest provider of healthcare education in England and educates nurses on three of its four campuses - Cambridge, Peterborough and Chelmsford (see figure 3). During the period of the case study (1996 to 1998), our three campuses admitted approximately 500 student nurses per year. Since then, the number of student nurses, nurse associates and nurse apprentices and midwives has increased to over 1,450 in 2021/2022. In addition, we have 338 placement providers (see Appendix 1) dispersed over a large geographical area, including community, hospital and private care settings (see figure 4). In 1996 to 1998, when this case study was conducted, there were around 2000 mentors on our active mentor register. These mentors were registered nurses in clinical practice who had received additional training to support and assess students in placement. Practice supervisors and practice assessors have replaced mentors to meet the NMC (2018b) Standards for student supervision and assessment. In order to maintain consistency, the term mentor will be used to identify the qualified practitioners who conformed to the NMC 2008 standards for managing clinical learning and assessment.

Given the increasing numbers of student nurses and the spread of placement opportunities over a large geographical area, ARU required a method of monitoring student progress in practice that was both efficient and beneficial to students and mentors. It also needed to facilitate expansion of placements.



Figure 3 Location of Anglia Ruskin University Campuses



Figure 4 Anglia Ruskin University Partners Hosting Placements

At ARU, the role of the personal tutor in supporting students in theory and practice is crucial. At the time of this study, cohorts/intakes of students at Anglia Ruskin University were large, with up to 200 per intake per campus, so on average, resulting typically in 500 student nurses per year across all three campuses. These groups were divided into tutor groups of 25-30 students, each of which was supported by a personal tutor/academic at the School of Nursing. The objective was for the students to maintain the same personal tutor throughout the duration of the course. The personal tutor system was and continues to be an integral component of ARU's undergraduate nursing curriculum. Tutors were responsible for meeting with their students, reviewing the PAD at the conclusion of the placement, reading the mentor feedback, and submitting placement results to the departmental assessment panel (DAP). Personal tutors also supported and reviewed students' academic progress and served as the first point of contact for students who required advice or assistance. In addition, personal tutors led all tutorials and group work sessions with their students and assisted the clinical skills tutors in skills laboratories. Most nurse academics were personal tutors. Typically, nurse academics had two personal tutor groups, such as a group of first years and another group of third-year students. This meant a personal tutor would have one group of students completing a placement while another group was completing a theory module at university.

Each ARU nurse academic was all also assigned to a link team as a link tutor, and each link team was led by an ARU Academic Educational Champion. The link team was responsible for designated link areas. The size of the link team depended on the number of available student placements in each link location. On a team rota, each link tutor was expected to visit their designated link area twice a month. The link team would help all students and their mentors allocated within their designated area, regardless of whether they belonged to their tutor group. This model proved more efficient than personal tutors having to visit their own students, who were allocated to multiple placement sites. It decreased travel for faculty and increased the frequency with which students interacted with ARU faculty in placement. Most nurse academics developed strong relationships with their link area that were conducive to providing practice assessment that is supportive. Less consistent, however, was student access to their personal tutor in placement. Nonetheless, the link system had its limitations. Whether a student or mentor could interact with the link team depended on their shift, coinciding with the visit of the link tutor or educational champion visit. Link areas developed a relationship with their Link Team that remained consistent for extended periods of time. I was a personal tutor as well a link tutor for Royal Papworth Hospital.

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The students within the case study participated in clinical placement and the assessment of practice assessment in the following areas:

Cambridge University Hospital (CUH) is a local hospital for the Cambridgeshire community and the University of Cambridge's teaching hospital. It provides medical, surgical and emergency care. In addition, it is also a prominent national centre for specialist treatments in organ transplantation, cancer, neurosciences, paediatrics and genetics. CUH is a 'Global digital exemplar', recognised as one of the most I.T. advanced healthcare organisations in the UK and has committed to assisting other organisations in following its lead. CUH provides emergency, medical and surgical care. With 1,000 beds and 7600 employees. Addenbrookes was the first hospital in the UK to introduce an entirely paperless patient record in 2015 (Cambridge University NHS Foundation Trust, 2020a).

The Royal Papworth is the most prominent specialist regional centre for cardiothoracic disease diagnosis and treatment in the UK. It is the primary heart-and-lung transplant centre in the UK. It treats over 24,400 in-patient and day cases and 73,600 out-patients each year from across the UK annually. Papworth is renowned internationally for its cardiology, respiratory medicine, cardiothoracic surgery and transplant services. It has 290 beds, five operating theatres and five angiographic suites. The Trust employs more than 1,800 people across a wide range of staff groups; (Royal Papworth Hospital, 2020).

Huntingdon's Hinchingbrooke Hospital is a district general hospital. The hospital has 304 beds, and a wide range of specialities. These include general surgery; otolaryngology; ophthalmology; orthopaedics; urology; breast surgery; gynaecology; vascular services; emergency care and obstetrics. On-site in-patient and out-patient care for children is provided by Cambridgeshire Community Services. The hospital also has private facilities and a Treatment Centre with 23 beds (North West Anglia Trust, 2020).

Peterborough City Hospital provides medical and surgical care and has 635 inpatient beds. The hospital has a haematology/oncology unit, a radiotherapy suite, a renal unit, an emergency centre with a separate children's emergency department, a dedicated Women's and Children's unit, a cardiac unit and a respiratory investigations service (North West Anglia Trust, 2020).

Cambridge and Peterborough Foundation Trust provide primarily in community-based NHS services. It offers integrated physical and mental health services for adults and the elderly; specialist mental health and learning disability services; children and young people's mental health services; children's community services (Peterborough); social care; and innovative research. In addition, Cambridgeshire Community Services (CCS) offers a variety of services to families, children and youth within the community; this includes immunisation, sexual health, physiotherapy and neuropsychological rehabilitation (Cambridge and Peterborough NHS Foundation Trust, 2020).

Some students were placed in the Independent Sector. This includes non-NHS private hospitals and facilities within the Cambridgeshire region.

1.7 History of the creation and adoption of MyProgress- the Sustainable Electronic Assessment Project (SEA)

1.7.1 Introduction to the SEA project

This thesis is situated within the ARU Sustainable Electronic Assessment Project (SEA), which migrated the processes and recording of practice assessment within the nursing courses from a paper-based system to a digital platform. SEA aimed to improve practice assessment record-keeping and the experiences of students, mentors and academics. The project objectives were outlined in detail in the project plan (Shaw, S, 2014). In this section, I provide a concise overview of the SEA project so that the reader can understand how the Case Study Research is situated within this larger project.

The SEA project was initially conceived in 2014 and concluded in 2018. It was initiated after a chance encounter I had with MyKnowledgeMap, the creators of the MyProgress, at a conference where they demonstrated an app they used for assessing medical student practice competency. The Assessment and Learning in Practice Settings project (ALPs) (Holt Coates, et al., 2010), was a collaboration between five universities (Bradford, Huddersfield, Leeds, Leeds Met and York St John) that led the development of the MyProgress app. Sixteen professional groups, professional statutory and regulatory bodies, practice-based and academic staff, service users and carers developed interprofessional competency maps as part of the ALPs collaborative project. The ALPs collaborative developed the maps in order to assess three essential healthcare professional competencies: communication, teamwork, and ethical practice.

1.7.2 Rationale for the SEA project at ARU

At the start of the SEA project, I was a senior lecturer with ten years of experience in adult nursing. Since 2004, I had been an educator of pre-registration nurses. By tutoring these students and serving as a link lecturer, I was familiar with the problems associated with practice competency assessment. I could not track the progress of my individual students unless I visited them on placement, or they came into university. I could not see, for instance, how they were progressing in completing their cluster skills or whether the PAD contained any cause for concern. Although students were supposed to email me their mentor details during the first week of placement, I frequently had to email or call to obtain this information, which was time-consuming. With up to sixty personal students to support monitoring their progress in placement, it was difficult to communicate with them and provide timely assistance. When I visited placements, students and mentors were frequently absent. Students who reached the end of their placements before their mentors raised competency concerns. Concerningly, some students reached their final placement before any reg flags were raised.

Historically, at ARU, mentor feedback for students was evaluated using a red, amber, and green rating system (RAG) by the student's tutor at the university (see Appendix 2). The mentor was given a score for the quality of their feedback by the tutor reviewing the PAD. Each trimester, the Educational Champion, would collate the information contained in the RAG forms for their area and provide feedback on the quality of mentor feedback to the

healthcare trust. Anglia Ruskin would send thank-you letters to mentors whose assessment quality was exemplary. With the paper form, we could evaluate the quality of a single mentor's feedback on a single mentee at a single time. However, we could not quickly determine if individual mentors, wards or trusts had ongoing problems with the quality of the practice assessment.

I anticipated that having a digital version of the RAG form embedded in the eOAR would allow ARU to better evaluate the quality of mentor feedback and facilitate the provision of support where feedback was consistently absent or did not provide adequate justification for the grade awarded. Due to the digital storage of the data in the eOAR, I had determined that it would be possible to track the quality of feedback of mentors, wards/areas of practice or trusts over time. I could see from the way the application operated that data could be extracted in a spreadsheet from the administration system and analysed. Using these data, ARU would be able to identify mentors/placement areas with sustained evidence of excellence in the quality of student practice assessment to share as exemplars of good practice across our network. It would also enable ARU to identify areas requiring additional training in order to work with our partners to enhance the assessment quality. This is important because, as previously argued, quality mentoring increase student success. Auditing mentor feedback would allow ARU to maintain consistency in the quality of feedback students receive from mentors during placement.

After receiving a demonstration of MyProgress at a conference, I believed that MyKnowledgeMap, working in collaboration with an expert nurse academic, could develop an app that would be useful for student nurses. I anticipated the app would enhance recordkeeping, guarantee timely completion of formative assessments and solve the issue of lost and filthy PADs. In addition, I hoped that it would allow me to track student progress without having to travel to placements, as well as assist in rapidly identifying students and mentors in need of support. MyProgress required configuration to meet the requirements of the NMC standards for pre-registration nurse education (2010) and the associated assessment processes. For instance, a method was needed to enable mentors to securely access the students' eOAR without the university having to add their information. This is because placement areas were unable to provide ARU with mentor information prior to student placements. We also required a method for interprofessional and service user feedback. Throughout the duration of the SEA project, I advised MyKnowlegeMap on the NMC professional statutory and regulatory requirements for student nurse assessment in practice. This collaboration led to the development of MyProgress, which maps the NMC standards for pre-registration nurse education (2010). MyKnowledgeMap modified the app's interface and functionality to meet the needs of nursing students and their mentors. The development process was iterative throughout the SEA project, including during this cases study research and, in 2022, remains ongoing; there is always room for improvement and further enhancements. Recent developments include mapping the competency framework to the Future Nurse: Standards of proficiency for registered nurses (NMC 2018e) and mapping the competency framework to the requirements of Nurse Associates (NMC, 2018d).

I have summarised SEA project timeline in Appendix 3. The bounded case study within this thesis is highlighted in grey within the larger SEA project. The SEA project was too large in scope and duration to be examined within a PhD. I chose the case study approach in order to concentrate the research on a single crucial milestone in the project's evolution and to enable detailed analysis. Before beginning this PhD, I had worked with MyKnowledgeMap for over a year to develop and test the app to meet the needs of student nurses. Before I enrolled in the PhD programme and began doctoral research, MyProgress had been utilised in two previous implementation attempts. These were funded by a single £3500 Anglia Learning and Teaching project. Most of this funding was used to purchase tablet computers for student nurses.

1.7.3 MyProgress implementation attempt 1 (Pre-PhD)

In consultation with the Deputy Dean for Education and Quality, two Heads of Nursing and Midwifery (Cambridge and Essex), the Course Leader for Nursing and the Director of Professional Practice, we trialled implementation of the eOAR with a group of 28 first year Paediatric Nurses in Chelmsford. This was the January 2015 cohort who began their first placement in March 2015. The project intended to digitise existing paper assessment processes.

We selected this cohort because they were a distinct, small and manageable group. We believed that a group of first-year students who had not used the paper version and had no

preconceived notions about how practice assessment should be conducted would perform the best. In addition, as an academic within adult nursing, I did not teach or assess this group of students, so there was no conflict of interest. ARU lent an ASUS Tablet computer to each student in the group. This initial pilot was halted after two days because the completed electronic documentation was disappearing from the students' accounts, and we could not find the cause quickly. To continue their placement, the students were all sent the standard paper version of the PAD. Upon further investigation, I discovered the assessments were not being deleted, but were being moved from the 'assessments to be completed folder' to the 'completed assessments folder'. A blank assessment replaced the completed one, creating the appearance that it had vanished. Both students and instructors lacked an understanding of how the application operated, which was the root cause.

1.7.4 MyProgress implementation attempt 2 (Pre-PhD)

After working on the app's robustness and useability, providing additional training resources for students and mentors and conducting additional testing, I trialled its implementation with a group of the second year Paediatric Student Nurses from the September 2014 Essex cohort in September 2015. We chose a second-year group because we had learned from our first implementation attempt that the students required some placement experience and assessment in order to feel confident using recent technology in placement. The initial plan was to transition the students from using paper to the eOAR and for them to continue using this platform until the end of their course. Before the students began their clinical placements, I visited all the placement areas the 28 students would be working to train their mentors. Despite this preparation, many mentors lacked confidence in their ability to use the tablet devices and the students did not feel comfortable demonstrating the tablets to their mentors. In addition, several of the mentors identified by healthcare trusts as those supporting the students were replaced by the placement areas prior to the beginning of the students' clinical practice. Due to this last-minute modification, some mentors did not receive eOAR training prior to the student's arrival.

The eOAR was functional; but there were design issues with the app, tablet devices and adoption/acceptance by the mentors and students in practice. The £3,500 budget for the project was inadequate. Since I was working alone on the project implementation and in my

full-time role as an academic/personal tutor, there were insufficient resources to support the students and mentors in placement and academics or evaluate the impact. At the conclusion of the placement, I met with all the students and their personal tutor to discuss their experiences. I spent two hours on campus listening and taking notes on the students' eOAR experiences. The students believed that the use of the tablet devices and eOAR made their course more difficult and stressful. The lack of student support was exacerbated by the absence of their personal tutor for most of the placement experience and time using the eOAR. At the conclusion of the placement, it was evident to me from the students' responses that we needed to return this cohort to the paper PAD because the eOAR was hindering their learning. This was a difficult but necessary choice.

During the second implementation attempt I visited 19 placement sites, met with the mentors of the 28 students in the clinical areas, provided training in the eOAR's use and evaluated their experience During the 12-week placement, I also provided additional support to all mentors and students via email. The emails I received aided my comprehension of some of the user issues.

Prior to further adoption of the eOAR with nursing students, the second attempt at implementation yielded important insights about what changes were necessary.

- Significant deficiencies in the digital literacy skills of students, mentors and academics that needed to be addressed. Specifically, how to use tablet computers and apps to work offline and synchronise assessments.
- All mentors in the field needed to have access to a more comprehensive training programme.
- We required round-the -clock support for all users
- The tablet devices provided needed faster processors and quicker battery charging times.
- Specific modifications were required to the document layout and interface configuration to make the application more user-friendly.

- Significant funding was required to provide adequate support for successful adoption of the eOAR.
- As a result of outdated computers and operating systems in numerous placement areas, the eOAR was inaccessible on some placement computers. Therefore, it was essential to utilise an eOAR platform compatible with mobile devices.
- Some mentors resisted using digital assessments and were unwilling to abandon paper.

1.7.5 HEE funding – Commenced PhD

In April 2015, following the first two implementation attempts, I demonstrated the eOAR, as I had developed it so far in partnership with MyKnowledgeMap, to Health Education England (East). Following this meeting, they requested I expand the use of the eOAR among nursing students at ARU and disseminate the findings throughout the East of England. HEE provided an initial £100,000 for this project. As I saw the opportunity to combine the work, I would do for the project, with a research investigation and develop research skills, I enrolled on the ARU PhD programme on 16th Sept 2016. The bounded case study includes the first group of ARU students to use the eOAR following the initial two trial implementations. The September 2015 cohort of students in Cambridge (Adult, Child and Mental Health) commenced with the eOAR in the second year of their course in September 2016. The Case study follows this cohort from the beginning of their second year until September 2018 when they graduated. These students had completed their practice assessment on the paper PAD in their first year.

As the Case Study group continued their course, ARU added additional groups to the SEA project annually because of the success of the eOAR in enhancing practice assessment and additional funding from HEE (East). These additional groups fall outside the scope of this study. Case study research must have boundaries, or the amount of data becomes unmanageable.

1.7.6 Update or eOAR use at ARU

Full rollout to all ARU's nursing students was completed in 2018-19. All cohorts of student nurses/ nursing associates at ARU commencing after Sept 2020 use the updated version of the platform. A partnership between ARU medical school and MyKnowledgeMap has produced a version of the eOAR for medical students that maps to the General Medical Council (GMC, 2015) standards for medical education. Approximately 3000 nurses and nursing associates in addition to 200 medical students presently use the eOAR. Approximately 10,000 students at ARU have been successfully assessed utilising the eOAR since its launch.

1.8 The context of the researcher within the landscape

The in-depth approach of case study research requires that I reflect upon and reconcile my identity within the context of the landscape in which the digital innovation was studied. The following section reflexively traces my professional career and how my current position within the social landscape is not an accident but a consequence of the journey I have travelled. My unique landscape provides my sense of 'self'. I have a 'hybrid' identity. This identity is not fragmented but cohesive, like a 'jigsaw'. I am accountable to different regimes of competence; existing within multi-membership means that I need to reconcile them. I identify as a nurse at the 'core' of my being. I hold current membership of the Nursing and Midwifery Council (Nursing and Midwifery Council, UK, 2015). I aspire to demonstrate NHS values consistently (Department of Health, 2021). The tenets I embrace and my experience draw me close to this community. With 16 years of clinical experience and familiarity with the professional language, I believe I have legitimacy within the community of nursing practice.

I hold a secure identity as an innovative educationalist–the desire to teach existed even as a student nurse. This is where I saw my 'fit' right at the beginning of my professional career. At a 30-year reunion, my friends recalled how they understood I aspired to one day teach nurses one day. Once qualified, I was always eager to support and work with students in practice and eventually became a practice development sister before transitioning into

academia. Education is now my primary locus; this means that there is a risk that I have moved to the peripheries of the professional nursing community. However, as I have taken on new roles, my past remains part of me - a nurse no longer nursing. Nevertheless, my history of participation within the nursing community of practice has left an indelible mark on my identity. As a researcher, I feel unfamiliar but legitimate in working at the boundary of this community.

I also have a digital identity and engage in online communities. My socialisation in this community started in my childhood; my father worked at Bangor University with computers then they were in their infancy. As a small child, I used to play computer games that my father had designed while he worked beside me. I observed as he constructed circuit boards and progressed from using resistors and capacitors to make bracelets to using his soldering iron to creating rudimentary programmable robots with his assistance. My socialisation in the digital community was affirmed in meeting my now-husband, who in 1995 was a postgraduate engineering student at Cambridge University and eagerly introduced me to the World Wide Web in its embryonic stages. I recall thinking, at the time, that it was slow and would never be widely embraced. I now use a range of social media tools and I am confident and able in these environments. I have my own 'digital voice' and may be considered a fully paid-up member of the educational technology community. I see myself more as a nurse and educator rather than a technological evangelist. As I worked on this dissertation, I saw myself increasingly as a disruptor who questions the status quo and stewards' innovative technology to solve problems and establish new digital pedagogies.

In my career, I have journeyed through high-technology landscapes. Early in my nursing career I specialised as an intensive care nurse. As a practice development sister, I led the staff education in introducing a clinical information system and paperless intensive care unit (the focus of my undergraduate research project). As an academic, I became interested in human factors and complex platform simulation (the subject of my master's research project), and I later gained a learning and teaching project award to investigate the use of vodcasts by student nurses for skill acquisition.

I instigated and led the implementation of digital practice assessment in the faculty, developing many of the tools and securing funding for the project. The insider position I hold helps illuminate the possible fit between the community's aspirations and technology. The insider perspective also helps me anticipate the practices that the community must develop to influence technology and enables me to adopt the role of 'Technology steward' by adopting the "community's perspective to assist a community in selecting, configuring and employing technologies to best suit its needs." Wenger et al. (2009:P24). This does not require expert technical expertise; rather, it involves the capacity to recognise the potential utility of a tool for a specific community.

With 16 years of experience in teaching undergraduate student nurses, I have developed a keen interest in how we support and assess our students in clinical practice. In my capacity as Director of Learning, Teaching and Assessment the quality of work-based assessment of competence are fundamental to my role in a faculty that predominantly offers vocationally orientated courses. Course and placement evaluations revealed that students sometimes felt disengaged from the University when in clinical practice and desired more support and NSS evaluations consistently highlighted the need to enhance assessment.

1.9 Technological and innovation context within the NHS

This thesis is the case study of a digital innovation. Technology is growing at an exponential rate. The UK is ranked seventh globally among countries positively placed to take advantage of technology - with Internet use predicted to grow globally by 2-3 billion users by 2025 (Manyika, et al., 2013). Furthermore, one of our campuses is based in Cambridge, globally renowned as an innovation hotspot. This fortunate location places HEMS at Anglia Ruskin in a fertile environment to cultivate and disseminate innovative ideas.

There is a growing call to adopt innovation and technology within health professional education in general and nursing specifically. The Topol review (2019), commissioned by the Secretary of State for Health, explores how to prepare the healthcare workforce for the digital future through education.

"Adoption of digital healthcare technologies requires an effective culture of learning at every level that enables the workforce to reframe their knowledge within an increasingly technologydriven world."

Topol (2019: P74)

The Topol review identifies the need to nurture growth mindsets. Dweck (Yeager and Dweck, 2012) coined the term' growth mindsets' to encapsulate the theory that intelligence is developed through learning). It asserts that societal development in the NHS must begin with by acknowledging the need for change. It also recognises that employees require time away from their regular responsibilities to 'grow and reflect on learning'. Using digital technology for the assessment of student nurses' clinical practice enables them to gain the digital literacy skills they will need at the beginning of their careers.

Goal four of the NHS Long-Term Plan (NHS England and NHS Improvement, 2019) is to employ better data and digital technology to establish a 'digitally enabled' future. Developing the skills of NHS personal in using informatics and technology is a key priority. Recommendation 4, theme 5 of The NMC Standards for Competence for Registered Nurses (Nursing and Midwifery Council, UK, 2014) states that the 'NMC should explore the development of a national assessment framework' for student nurses. The introduction of digital practice assessment provides the opportunity to contemplate the creation of such a framework. Additionally, theme 7 emphasises a need to facilitate and encourage research, innovation and evidence-based practice. These developments are crucial to creating a flexible workforce, which is adaptable to changing service user needs and the adoption of innovative technology. Health Education England (2016) published a strategy for all healthcare staff that outlines how HEE will develop an education and training system that is evidence-based and underpinned by research and innovation. In their report, the Higher Education Policy Institute (Davies, Mullan and Feldman, 2017) emphasises the importance of integrating the effective use of technology across curriculum design to respond to the Teaching Excellence Framework (Office for Students, 2018). The report highlights the benefits of technology, particularly learning analytics, to improve student engagement, retention and completion rates.

Digital literacy is pertinent for our graduates, as sizeable local health care providers such as Cambridgeshire University Hospitals Trust have adopted paperless record-keeping. In adopting electronic practice assessment, universities have an unprecedented opportunity to equip future nurses to be technologically savvy and to have the employability skills necessary to operate in the modern NHS (Topol, 2019). It also provides the opportunity to enhance these same skills for mentors/assessors. Digital competence is a crucial employability skill for nurses; given that at the RCN believe that every nurse should be an Enurse (Royal College of Nursing, 2018).

The 2020 the COVID-19 pandemic has dramatically demonstrated the NHS's need for digital transformation; NHS Digital led a coordinated digital response (NHS Digital, 2020).

1.10 Chapter summary

This chapter has explained and validated the need for research into the adoption of an electronic ongoing-achievement record for student nurses. The complexity of student nurse education and assessment in practice has been discussed within the context of the dynamic changes in nurse education.

The issues associated with the assessment and support of students in practice were situated in the context of a national shortage of nurses, which is compounded by high attrition rates of student nurses. It has never been more important to ensure that students who commence their courses complete them successfully.

The academic and clinical context in which this case study was situated, and the researcher were introduced. The last section of the chapter sets the research into the technological advances.

Chapter 2: Literature Review:

2.1 Introduction

Chapter one presented an overview of the complexities of both the history of student nurse education and the political agenda within which it operates. It outlined the regulatory requirements for student nurse assessment in clinical practice. The existing problems with paper-based practice assessment were identified, including the theory-practice divide, inadequate support for students and mentors in completing the assessment, grade inflation, a failure to fail students and high attrition rates. The University and placement areas included in the case study research, were established. The drivers for digital innovation and transformation within the NHS were identified.

2.1.1 Why a community of practice approach?

There are many theories of change management which could potentially have been applied to researching the adoption of electronic practice assessment. In selecting a theoretical approach to researching the implementation of the eOAR, I read widely about the practice assessment of student nurses and learning in practice. Reading Wenger-Trayner, et al.'s (2015) 'Learning in landscapes of practice. Boundaries, identity and knowledgeability in practice-based learning' immediately illuminated the approach that best fitted with this case study. This text offered a description of the NMC proficiencies and portfolio as boundary objects, bridging theory and practice, and supporting connection and collaboration.

" They define who needs to be involved in the encounter, and they provide a shared focus and framework for the discussion, which supports the process of aligning and interpreting the practice experience. These are flexible boundary objects which serve several purposes: Organising evidence, assessing performance, providing a paper trail, focusing discussion, setting learning goals and planning for further connections between different practices."

(Wenger-Trayner, et al., 2015, p 85)

Their position resonates with my understanding that the practice assessment of student nurses is a social encounter involving students, academics and mentors and the wider practice community. Hence engaging with and completing this assessment depends on the relationships of a community of people and understanding practice learning and assessment must consider these relationships. Also, they portrayed practice assessment as a process with clearly identified actions surrounding assembling and interpreting evidence of learning in an auditable account of assessment decisions, congruent with paper or digital based nursing assessment. This synergy suggested that their theoretical framework would support the objectives of this study to gain insight into implementing digital assessment within a nursing community. An important component of implementation of the eOAR was developing knowledge of how to support it and overcoming barriers to its adoption; these could only be fully understood in the social context in which the eOAR was being utilised. This recognition directed me to approach the case study through the lens of social learning theory as outlined by Étienne Wenger-Trayner and his co-authors.

Four key texts underpin the approach taken; Learning in Landscapes (Wenger-Trayner et al., 2015) which extends both Lave and Wenger's theory of situated learning and legitimate peripheral participation (1991) and Wenger's theory of communities of practice (1998), both texts I had read previously but revisited in preparing to undertake this research. Finally, Wenger, White and Smith's (2009) Digital habitats: Stewarding technology for communities particularly fitted with this case study, which has its foundations in digital change. The following section explores how these historically build this perspective of social learning theory and provides the framework for this thesis.

2.2 Adopting modern technology in a community of practice

2.2.1 Cognitive apprenticeship and situated learning

Having presented the evidence that the assessment of student nurses in placement needs improvement, this section contextualises the introduction of the eOAR within the framework outlined above.

Collins et al., (1986) coined the term 'cognitive apprenticeship' to define an instructional model originating from the metaphor of a traditional apprentice learning psychomotor skills

under the supervision and guidance of a master. The trainee initially observes the skill - then increasingly attempts more complex tasks before eventually no longer requiring support and working independently. In cognitive apprenticeships, skill acquisition is modified to include an additional, invisible aspect of the task — the thinking that is required before and during performing the skill. In a cognitive apprenticeship, thinking also needs to be made transparent to the apprentice. Wenger-Trayner, et al. (2015,p.14) state that, when a newcomer enters a community, the 'regime of competence' shapes and manipulated their experience until their competence mirrors that of the community.

This approach also embraces the idea that learning is influenced and enriched by the social processes that integrate active involvement within culturally organised environments and activities (Lave and Wenger, 1991; Järvelä, 1995). Fundamental to this concept is the premise that students acquire conceptual understanding by participating in problems related to real-world activities alongside experts (De Bruijn,1995). This type of learning has been termed 'situated learning' (Brown, Collins and Duguid, 1989) and is a core tenet in learning within a 'community of practice'. Therefore, both cognitive-apprenticeship and situated-learning theories emphasise the importance of the context for learning to be effective.

2.2.2 Communities of practice and legitimate peripheral participation

"Communities of practice are groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis."

(Wenger, 2002,p.4)

To complete a student nurse's practice assessment all contributors, need to develop a mutual understanding of the process and rationale for assessing the student nurse's competence in practice and collaborate to ensure the assessment is completed.

"The body of knowledge of professions is best understood as a landscape of practice consisting of a complex system of communities of practice and boundaries between them. " (Wenger-Trayner, et al., 2015,p.13)

The work of Lave and Wenger (1991) contested the notion of learning as an individual endeavour, proposing instead that it is a group activity occurring through participation in social processes. The community-of-practice theory suggests that inclusion in sharing of practice with a compatible group of individuals, within a distinct professional group, is central to learning and the professional identity of the group members. This results in a profound socialisation, which incorporates both novice and experienced practitioners. The identities of the group's participants can be further developed by collaborative participation in the community. Learning is, therefore, dependent upon legitimate peripheral participation in the practice (Lave and Wenger, 1991; Fox, 2000; Handley, et al., 2006).

Nicolini, Silvia and Yanow (2003) highlight that social learning combines the ontology of being/becoming a practitioner and the epistemology of knowing about practice. 'To know' is to be capable of participating with the requisite competence in the intricate web of relationships among people and activities' (p.44). This perspective is counter to the traditional view of learning as the acquisition of new knowledge, concepts or theories (Sfard, 1998). According to Handley, et al. (2006) for a novice to be able to participate fully in the community (from the perspective of the 'masters') he must be effective in steering a path from peripheral to full participation and in doing so developing a sense of belonging to the group. To learn, novices must be engaged in the social processes of the ordinary life of a community.

The concept of a community of practice is securely recognised by a variety of healthcare professions (Wenger, 2002). In America and Australia, it has contributed to the development of education units devoted to educating student nurses (Moscato, et al., 2007; Ranse and Grealish, 2007; Grealish, Bail and Ranse, 2010). Its influence on learning in practice within the UK, however, has been narrower but is recognised within the role of the mentor (Myall, Levett-Jones and Lathlean, 2008; O'Driscoll, Allan and Smith, 2010). Experienced staff nurses in 'Dedicated Education Units' acknowledged that their knowledge was improved by mentoring students (Grealish, Bail and Ranse, 2010) this suggests that it is possible for inexperienced student nurses to challenge the cultural norms of clinical practice and that collaborative learning can occur.

Wenger, (1998) claimed that novices could make a discernible difference to the culture of a community of practice and contribute to the production of new knowledge. Wenger (1998) further suggests that experienced group participants personify the ethos and history of the community of practice and can have a substantial impact on the socialisation and identification of the novice. When the supervision of clinical learners is undertaken in an enabling, progressive, consultative placement, then the students were able to be more participative. Wenger cautioned that the robust ties that enhance the working of a community of practice could also create barriers for the novice attempting to join. Specific ways of working with the community can become entrenched and 'hold (participants) hostages to that experience' (Wenger, 1998, p.85). A community of practice may screen the knowledge it adopts and therefore, is at the peril of festering and socialisation becomes constrained to a narrow frame of thought.

2.2.3 Students inhabit multiple communities.

The nursing community of practice is not a single province but a complex 'body of knowledge' comprising a 'landscape of different communities of practice' (Wenger-Trayner, et al., 2015,p.i); it incorporates academics, researchers, specialist nurses, management and those involved in the day-to-day care of the patient. Moreover, each of these groups has a unique province of competence. The communities in the landscapes like weathering, consistently shift and change as they interact.

In an apprenticeship model, when a student enters a community of nursing, the knowledge and competence within the community will shape her experience until her experience mirrors the community's capability. A member of the community can also challenge that there is a better practice and reshape the community. Any new experience outside its normal realm of competence may cause the community to examine and renegotiate its definition of competence.

2.2.4 Legitimacy

Legitimacy has a duality of meaning in this thesis, what is valid according to the NMC regulations (regulatory legitimacy) and what the community of nursing practice negotiated as legitimate (community legitimacy) in completing the practice assessment documentation.

To achieve regulatory legitimacy, the eOAR needed to meet the requirements of the NMC 2010 'Standards for pre-registration nursing education (outlined in Section 1.4); whilst also addressing some of the known issues with the practice assessment of student nurses discussed in Section 1.5.

What is understood as legitimacy within the community of practice will be explored in this next section.

"A challenge of a claim to competence may be refused by the community; a newcomer may be marginalised. A new idea dismissed. Acceptance or resistance may be well-founded, groundless, or even politically motivated."

(Wenger-Trayner, et al., 2015,p16)

Wenger-Trayner et al. (2015) highlight that learning as a social process always includes power issues. The student nurse is in a low power position in her relationship with their mentor, as they depend on the mentor's feedback to pass the assessment and their course. The practice landscape in which student nurses work is political and can adopt innovative ideas and policies or ignore them as irrelevant. Alternatively, of more concern, the practice landscape may appear to be complicit while continuing on its own path. There are knowledge hierarchies, meaning there is no certainty that a successful claim to competence inside a community will convert to a claim to 'knowledge' beyond the community where it is effective. Wenger- Trayner, et al. (1998) describe how when a newcomer enters a community, the 'regime of competence' shapes and manipulates their experience until their competence mirrors that of the community. The community may be challenged to reevaluate its practice; this re-inspection can be initiated by any new experience outside the 'regime of competence'; for example, the nurses' usual pain relief methods are ineffective for a patient. Consequently, the definition of competence may be redefined. Wenger-Trayner et al. suggest that the community can reject a challenge, or an assertion of competence and a newcomer moved to the boundary, or an innovation rejected. The adoption or dismissal of a new idea may be for a good reason, unjustified or even politically motivated.

'Practice is a production of the community that engages in it' (Wenger-Trayner, et al., 2015,p.16). Mentors using digital practice assessment, however, did not instigate the

adoption of electronic on-going achievement record or request it – even though other users within the landscape may attempt to legitimise it (academics, managers, researchers), this does not necessarily make it legitimate to the mentors. This imposition of change raises whether the absence of legitimacy of electronic assessment in practice contributes to the challenges in adoption and how can it be legitimised? Does this make the competence of current mentors in completing practice assessments invisible or irrelevant/weak? Wenger-Trayner, et al. (2015,p.17) suggest that something not originating from a community of practice may provoke distrust and resistance to change.

Historically, the practice assessment of student nurses has been a paper exercise with mentors reporting difficulties in tracking and recording details of students they have supported once they have left the clinical areas (Wenger-Trayner, et al., 2015, p.16). The student owns the OAR and mentors do not have access to this once they leave that placement area.

2.2.5 The Digital Community

Using electronic practice assessment creates its own digital community; there will be interactions between the community and the technology, and there is an opportunity to learn together from and about this interplay. The mentor, student and tutor can communicate within this digital landscape and how they learn together forms a valuable perspective. Wenger, White and Smith (2009,p.4-21) explain how innovative thinking of communities has shaped the evolution of 'digital habitats. Technological developments such as the World Wide Web, wiki and Twitter were built to satisfy the unmet needs of a community. As communities adopt technologies, they 'make themselves at home' (p:19) and begin to shape their digital habitats. I am curious about how the intertwining of community and technology influences the use of MyProgress in nursing practice and its acceptability as the norm of practice assessment. The evolving use of digital practice assessment affords the opportunity to investigate the evolution of this community and its foundational principles.

2.3 Using an eOAR

2.3.1 Literature review strategy

Literature searching was an iterative process that was ongoing throughout the research. An initial literature review was undertaken using search engines at the start of the study using terms identified initially through key reading. The aim of the literature search was to identify and retrieve publications relevant to the research questions.

Search strategy

The main databases searched were CINAHL PLUS (Cumulative Index to Nursing and Allied Health Literature), Medline, EMBASE (Excerpta Medica Database), which also includes PubMed and the Cochrane Library in its corpus. All databases were searched initially from 1st January 2006 to 31st September 2017. The language was restricted to English only. After reading a few papers, a search strategy which combined free words was developed. Duplicates were removed. Irrelevant literature was identified by reading the paper titles and abstracts. Papers which appeared initially relevant were downloaded to Evernote for later review and full texts read. Finally, references for the included studies were reviewed for further relevant studies. Hyperlinks within the databases for subjects, keywords and authors for relevant papers were used to find related content. The following links were clicked on.

- authors' names to access more of their publications
- subject headings or keywords to find more resources on the same topic
- recommended and related content.

I set up a personal account on Medline and CINAHL to receive alerts for when new papers of potential interest were published throughout the remainder of the research project from Sept 2017 to March 2022.

In addition to databases, additional search techniques were employed. Google Scholar was used to search open access materials, many of which contained direct links to full-text articles available at Anglia Ruskin University Library. The conference proceedings from the annual RCN Education and NET/AdvanceHE and the British Library Ethos database of doctoral theses were reviewed to locate any unpublished 'grey literature.' Websites of the

Department of Health, Nursing and Midwifery Council, the King's Fund and the Royal College of Nursing were also searched to identify policy documents. I used the Journal Content Service of two Journals—Nurse Education Today and Nurse Education in Practice to alert me of the table of Contents when they were published. Networking within specific interest groups also brought to my attention others researching in the same area. This enabled me to seek publications from known groups of academics/researchers.

Even within ten years, the technological advances have been so rapid that any technology used over three years ago has limited functionality compared to current devices. Had the body of research in this field been greater, it would have been preferable for this reason to narrow the search to five or even three years.

The search strategy was explicitly focused on the electronic assessment of student nurses in clinical practice against regulatory or professional competence. While the literature on student nurse e-portfolio use was likely to reveal shared findings, much of this literature was excluded as contemporary e-portfolios fundamentally differ from an eOAR. As noted in section 1.4, an eOAR is fixed in the evidence submitted to meet regulatory requirements; there is little or no negotiation about what is included. It must be accessible to mentors in placement areas to read and document against and signed off securely whilst preventing falsification of documentation. These requirements for regulatory oversight add a layer of complexity. The eOAR role as an assessment tool for accreditation by mapping to regulatory requirements reflects the focus of e-portfolios as used over a decade ago (Hallam, et al., 2010; McAllister, Hallam, and Harper, 2008). To realise the potential of e-portfolios as spaces for student development rather than the presentation of evidence against required skills and competencies, it is essential to differentiate between eOARs and e-Portfolios.

Universities initially considered using e-portfolios to promote personal development through reflection following the Dearing Report (1997). Reflection remains central to e-portfolios as learning rather than purely assessment spaces. JISC (2020) provides a contemporary view of an e-portfolio stating that it involves 21st-century digital skills in the underlying tools and techniques used to create the content. While some skills, such as giving and receiving feedback and reflection, are scaffolded in e-portfolio and eOAR creation, e-portfolios provide greater opportunities for learning and digital skill development. This is because of the range of artefacts a student can include and skills developed in selecting and arranging the content to communicate a student's unique identity. An e-portfolio is a purposeful collection of a

sample of student's work to showcase achievement. It should be creative and include a range of artefacts that the student chooses to display their learning progression. It can include essays, multimedia, blogs, graphics, etc. While an e-portfolio can also function to monitor and evaluate course effectiveness and is not a random collection of a student's work, there is more freedom in what the student includes.

Search terms used

- Nurs*, student, mentor, assessor, supervisor, academic, tutor, preceptor
- practice, placement, clinic, hospital, community
- digital, electronic, tablet, computer, personal digital assistant, PDA, mobile, smartphone, iPhone, iPAD, app, android
- OAR, ongoing achievement record, e-portfolio, portfolio, record, achievement, documentation,
- assess*, competence, skill
- education

The Boolean operators AND, OR and NOT were used to combine terms and focus the research.

Inclusion and exclusion criteria were as follows.

Inclusion criteria.

- Population: pre-registration nursing students in clinical settings receiving clinical education (adult, child, mental health, learning disability, apprentices, degree or higher degree level courses).
- Initially, I limited the search to UK education settings but later expanding it to nursing students anywhere in the world as there were limited research studies found.
- Intervention: assessed in practice using desktop computers, digital mobile devices such as smartphones, personal digital assistants (PDA) and tablet computers.
- Evaluated the experience of the student or mentor or academic/personal tutor in using computers or digital mobile devices in placement for assessment.
- Evaluated the attitude of students, or qualified nurses or academics towards students using computers or digital mobile device in clinical placement.
- Published in the English Language

Exclusion Criteria.

- Qualified nurses undertaking continuing professional development courses or higher degrees.
- Studies which did not include digital assessment of learning in practice.
- Studies which used computers or mobile learning as a practice teaching tool rather than an assessment platform.
- Studies of e-portfolios for academic assessment or continuing professional development rather than placement/practice assessment.
- Opinion or reflective paper rather than research.

As the research progressed, the search narrowed to the issues which emerged as relevant to the case. There was minimal research published that met the inclusion criteria and did not fall within the exclusion criteria above. What is published is mainly of poor quality, with many studies limited to pilot projects. A final literature search was undertaken close to the completion of the PhD to include recent literature, policy and new NMC regulations for nurse education. Figure five below summarises the literature search.



Figure 5 Literature search

2.3.2 Characteristics of the included studies

Seven research studies were identified from the initial search that investigated digital practice assessment of student nurses (see Appendix 4), one from Australia (Bogossian and Kellett 2010), one from Canada (Garrett, MacPhee and Jackson 2013), one from New Zealand (Mackay, Anderson and Harding 2017,), one in Scotland (Smith and Cambers 2017), and two from England (Morgan and Dyer, 2015; Black, Kane and Elworthy 2014). An additional study was identified from England, where the participants were midwives (Dearnley, Haigh and Fairhall 2008). This paper was included in this study due to its proximity to the thesis' case study. It was a study undertaken in England and, therefore, a course regulated by the NMC. Also, it used an application from the ALPs project, the forerunner of MyProgress, the tool used for the practice assessment of student nurses in this thesis. Two papers published after the initial search were added to the review later, one from Hong Kong (Li, et al., 2019) and one from New Zealand (Madden, Collins and Lander, 2019).

The study populations varied in the research. Three studies investigated the experience of both student nurses and their mentors /clinical educators/ clinical instructors in using digital practice assessment (Bogossian, and Kellett, 2010; Garrett, MacPhee and Jackson, 2013; Smith and Cambers, 2017), one student nurses only (Madden, Collins and Lander 2019), one clinical lecturers and researchers (Mackay, Anderson and Harding 2017), one student nurses and academics (Black, Kane and Elworthy 2014), one student nurses and student midwives (Morgan and Dyer,2015), one student nurses and the course leader (Li, et al., 2019) and one student midwives and academic lecturers (Dearnley, Haigh and Fairhall, 2008). The student study populations were cited in the studies as second-year student nurses (Garrett, MacPhee and Jackson, 2013), third-year student nurses (Bogossian and Kellett, 2010), first-year mental health students (Smith and Cambers, 2017), pre-registration student nurses and midwives (Morgan and Dyer 2015), Clinical lecturers and researchers (Mackay, Anderson and Harding, 2017).

No two studies used the same digital platform for assessing clinical practice. Most used bespoke software specifically developed for their own needs; these include; Clinical Practice

and Performance Electronic Portfolio (CPPeP) (Bogossian and Kellett, 2010), Practice Education Portfolio (PeP) (Garrett, MacPhee and Jackson 2013), an electronic equivalent of the eOAR (Smith and Cambers 2017), e-Assessment of Professional Practice (eAoPP) (Morgan and Dyer, 2015), reflective experiences (Mackay, Anderson and Harding 2017), Assessment and Learning in Practice (ALPs) (Dearnley, Haigh and Fairhall, 2008) PebblePAD (Black, Kane and Elworthy, 2014) and Pathbrite (Madden, Collins and Lander 2019). Several studies relied on desktop computers to record student assessment information (Bogossian and Kellett, 2010; Smith and Cambers, 2017; Morgan and Dyer, 2015). The mobile devices used to run the applications also ranged from obsolete personal digital assistants/pocket PCs (Dearnley, Haigh and Fairhall, 2008), Android tablets (Black, Kane and Elworthy, 2014) to iPADs and iPhones (Garrett et al. 2013, Mackay, et al., 2017) and iPod touch (Li, et al., 2019). Because of the variety of platforms and devices, it is difficult to compare the studies directly.

There was a wide range of research methods and methodology, which included a postal survey of students and clinical preceptors (Bogossian, and Kellett, 2010), mixed-method action research using google tracking analytics alongside a survey (Garrett, et al., 2013), a mixed-methods pre and post-placement survey (Smith and Cambers, 2017), a qualitative descriptive study using reflective journals (Mackay, et al., 2017), case study (Dearnley, Haigh and Fairhall, 2008) focus groups (Black, Kane and Elworthy, 2014), Focus Group and Survey (Li, , et al., 2019; Madden, Collins and Lander, 2019). Morgan and Dyer (2015) do not describe their data collection methods.

2.3.3 Findings from the studies

Barriers to adoption of an eOAR

A key obstacle to adopting e-practice assessment was gaining access to computers in the clinical areas. Insufficient computers were available in clinical areas to undertake student practice assessments. Those computers that existed typically lacked access to the internet and were in public spaces (Bogossian and Kellett, 2010; Smith and Cambers, 2017). Smith and Cambers (2017) identified a lack of computer access as the chief obstacle to expanding the use of e-assessment in practice. In areas where mobile devices were used, weak or

non-existent wireless connectivity was a problem (Dearnley, Haigh and Fairhall, 2008). When students were provided with mobile devices, they did not bring them in. Dearnley, Haigh and Fairhall (2008) identified that 45% of students did not regularly take the PocketPC into clinical practice. Student fear of losing or breaking the device was a factor in this (Dearnley, Haigh and Fairhall, 2008; Li,et al., 2019).

Li, et al., (2019) used an app-based assessment on an iPod touch that required Wi-Fi connectivity to access the internet. For the clinical assessment, the lack of ability to connect to WI-FI in placement was not an issue. However, it was problematic to access an associated learning package of videos (library of clinical skills) on a second app that the students were also required to download and use in placement. This meant that students used the second app on the iPod touch and then connected to the internet using their mobile phones (3G and 4G devices) to access the videos. Students remarked on the inconvenience of carrying and using two devices. This begs the question of why the students did not download both applications onto their own mobile devices.

Societal barriers were also a constraining factor, particularly the negative perceptions of clinical staff. Clinical staff approached the use of e-assessment with varying levels of acceptance or dismissal. Students perceived that some mentors appeared reluctant to engage in the process. Some mentors refused to type into the PocketPC during feedback interviews, preferring to complete a paper version, dictate to the student, or link lecturer (Dearnley, Haigh and Fairhall, 2008). Bogossian and Kellett (2010) reported negative registered nurses' attitudes towards students using 'their' computers. Some registered nurses did not have access to an email address and were reported to have had a general dislike of computers. The ward was not seen as an appropriate area to assess students. Students themselves needed to justify their actions when using a computer, perceiving that staff were scrutinising their actions. To overcome some of the access issues, Bogossian and Kellett (2010) reported that most of the students (71.5%/30) accessed their e-portfolio at home as it was 'easier' and 'more convenient.

More recently, Mackay, Anderson and Harding (2017) found that societal attitude remains a barrier to adopting technology for student learning and assessment, iPADs were perceived as a social gadget rather than an educational tool. One senior manager actively discouraged the use of smartphones on her ward. Her concern was that the devices were being used for social networking. The senior nurse manager dismissed any notion that the technology could

be used for learning. Some lecturers perceived this negative societal view of iPhones and iPADs as a constraining factor in adopting digital practice assessment. Dearnley, Haigh and Fairhall (2008) assert that introducing mobile technology into the clinical setting will require a substantial shift in culture, training and support. In their study, several students recounted that practice mentors had instructed them not to get out the 'PocketPC' in front of patients. A notebook and pen were considered acceptable.

Bogossian and Kellett (2010) reported that 90% (38) of students were comfortable working with computers. The researcher fails to recognise that there are distinct fundamental skills in using a computer and a hand-held device and that the skills are not necessarily directly transferable. Nevertheless, training in the use of the e-assessment was found by several of the research studies to be problematic. Garrett, MacPhee and Jackson (2013) reported that three instructors (n=10) believed that the training on the platform was insufficient, while three students (n=14) reported that training was too early. Smith and Cambers (2017) found that the students' self-reported confidence with the eOAR increased after both their first and second placement using the platform (n=4).

In contrast, the mentors' confidence fell after the first placement (n=3) but rose following the second placement (n=3). One mentor reported reduced confidence in their digital skills after the second placement. The students expressed fewer needs than mentors for additional support. Smith and Cambers (2017) said that training to use the platform was essential and that further training was required, as some students forgot how to use the system. They also found that some mentors were acquiring additional support by using the eOAR from students. Smith and Cambers (2017) state that it is essential that students have a named person with the technological 'know-how' to address any problems that arise in using mobile technology.

Students and mentors struggled to find enough time to complete the assessment (Bogossian and Kellett, 2010). This was due to busy wards, patient care and gaining new clinical skills taking precedence over completing assessments on computers. To overcome some of the access issues, 71.5% /30 students accessed their e-portfolio at home as it was 'easier' and 'more convenient.' Dearnley, Haigh and Fairhall (2008) also reported that typing information took too long on the 'Pocket PC'. One reason for this was that the devices were too small.

Improvements in the e-assessment navigation system, in particular, a more user-friendly interface, were identified as essential to make the completion process more accessible (Garrett, MacPhee and Jackson, 2013; Smith and Cambers, 2017).

The study by Black, Kane and Elworthy (2014) appears to be one of only two which used a proprietary e-portfolio for the ongoing achievement record, i.e., using PebblePAD. In their pilot study, they found that students participating felt that being in a study resulted in them undertaking additional work compared to other students on their course. This included attending additional tutorial sessions. The students implied that if all the students in the cohort had been given a tablet and e-assessment was standard practice, this would have removed the feeling of being 'singled' out and having to do more. Difficulties in testing the new technology were compounded by introducing a new nursing curriculum and the fact that clinical placements were shared with another university using different practice documents. Black, Kane and Elworthy (2014) found that students lacked sufficient digital literacy and had a fear of modern technology. Mentors also varied in technological literacy. The android devices used were substandard, clunky and unresponsive. Both students and mentors stated PebblePAD was not compatible with the OAR.

Studies which are a pilot have issues with engagement as students see the project as timelimited and so do not invest time in learning to use the devices (Dearnley, Haigh and Fairhall, 2008). Dearnley, Haigh and Fairhall found some students lost data by allowing the batteries of the PocketPC to run down entirely. They were also not synchronising data back to the main computer for safe storage. In the end, the students reverted to paper.

The PeP web-based platform used in the study by Garrett, MacPhee and Jackson (2013) enabled clinical instructors to access the student's placement training record from the start of their course. The ease of access to the competency assessment data cultivated unease for students regarding respect to transparency, trust, privacy and the student's right to confidentiality. Only 33% (12) of students thought this increased transparency was beneficial. The PeP did not broaden the access rights beyond those that existed with the paper assessment data (as instructors had access to the paper version). It was the ease of access that raised the concerns. Many students (and some instructors) articulated the opinion that instructors should only have access to the current placement record.

Benefits of e-practice assessment

Bogossian and Kellett (2010) found that 88% of the students preferred the e-portfolio over the paper version. Of the students, 57% and both preceptors agreed the CPPeP facilitated the integration of theory and practice to a greater degree than a paper portfolio. In contrast to the students, most instructors valued the ability of an e-portfolio to improve transparency and track students' progress and links to the competency-based framework (Garrett, MacPhee and Jackson, 2013). Garrett, MacPhee and Jackson (2013) found that 67% (12) of instructors believed that access to prior course assessments was advantageous and they liked seeing the student development from the start of the course. Using google analytics in the study by Garrett, MacPhee and Jackson (2103) enabled the researchers to track student engagement with the e-portfolio accurately. Usage peaked at the start and end of placements. The average visit to the platform lasted 12½ minutes. While the platform was web-based, 200 visits were from iPhones, iPads and iPods and five from other mobile devices. Most mobile device visits were on journaling activities (a weekly requirement of the course).

In their study at Southampton University, Morgan and Dyer (2015) report that using the eAoPP reduced the workload of the academic staff and provided better administration. Interim assessments were completed on time rather than near the end of the placement, as had been the case previously. The digital record was clearer than handwritten scripts and had a role in ensuring quality assurance of placement experiences.

Mackay, Anderson and Harding (2017) identify that using mobile smart devices in practice enhanced students' critical thinking and deep learning and used various learning styles (auditory, kinaesthetic and visual). However, there is widespread criticism of the view that students have different learning styles and that teachers must adapt their teaching to them (Lethaby and Harries, 2016). There is less than a 50% agreement in how students selfreport their learning style and the outcome of established questionaries (Krätzig and Arbuthnott, 2006). There is no evidence that matching learning styles improves learning (Pashler, et al., 2008; Rogowsky, et al., 2015). Six lecturers incorporated iPADs to support learning in clinical settings in the study. The data was collected in a single focus group of the academics; the findings are the perceptions and experiences of the lecturers. There is no substantive evidence to link the use of the iPad in placements to enhanced critical thinking. Li, et al. (2019) reported that using e-assessment in practice decreased the administration load for the course clinical co-ordinator. They also reported that the improved access to the student assessment was helpful. Students received more immediate feedback, which was beneficial for their development. The students were content with the size of the iPod touch because of its portability and did not want a larger device.

A small pilot study of ten final-year student nurses comparing their perspectives on using an e-portfolio with paper-based portfolios revealed positive experiences (Madden, Collins and Lander, 2019). The key finding was that the e-portfolio worked from the students' perspective due to ease of feedback and convenience, for example, not requiring to come into college to submit work and less room for error in completion. Increased transparency through ongoing, prompt feedback from the course coordinator whilst the students were in clinical practice was viewed by the students as reassuring and comforting that the academic staff were aware of their progress in clinical practice. The reliance on supporting technology, particularly document scanners for uploading documentation signed by preceptors in practice, was identified as a theme in the data analysis. Interestingly, students used a range of solutions, including home scanners, scanners at university and taking photos using a Camscanner on their mobile phones. There is no mention of if and how the need for additional technology impacts students with additional learning needs or the attainment of disadvantaged students.

2.3.4 Limitations of the literature on using electronic practice assessment

Only three of the studies were based in the UK and focussed explicitly on the digital practice assessment of student nurses (Smith and Cambers, 2017; Morgan and Dyer, 2015; Black, Kane and Elworthy, 2014). Smith and Cambers (2017) were the only of these that focussed unequivocally on student nurses (n=5) with their mentors (n=5) and explored the experience of using an eOAR. Of these ten participants, one student left during the first placement and one mentor did not return the post-placement questionnaire. This was a small pilot of student nurses on the BSc. Hons Mental Health nursing. The study is, therefore, extremely limited in its scope and depth. The experience of academics was not explored. There is no

data on the sustained impact of the innovation or how challenges could be or were overcome, e.g., the lack of availability of computers. The paper does not indicate what platform was used for the e-practice assessment. Morgan and Dyer's (2015) paper lacks rigour. It states that the study included preregistration student nurses and midwives but does not provide further details of the sample size or sampling method. Neither does the paper include information on research methods or methodology. The findings do not appear balanced as they record only positive impacts without reference to any challenges.

Black, Kane and Elworthy's (2014) study is another pilot of n=6 preregistration student nurses and n=5 lecturing staff evaluating their experience of using PebblePAD to record the eOAR using handheld tablets. It omits the experience of mentors. Data collection was via one student and one academic focus group. The focus groups were not recorded or transcribed. Instead, the researcher used comprehensive notes to summarise key issues. This raises questions regarding the reliability of the data and findings. The results are unpublished, and the findings were drawn from the Bedford University website. The research lacks methodological rigour. Students and mentors expressed concerns that the platform was incompatible with the OAR and the implementation did not appear successful.

International studies, while interesting, are challenging to translate to the UK context. The standards against which students are assessed and regulatory requirements are different, so the validity of findings in the UK is a concern. In addition, the support and supervision of students in clinical placements vary from country to country and are highly contextualised. The role of mentor and academic tutors are specific to the UK and cannot be directly compared, for example, with clinical lectures in New Zealand or preceptors in Australia. Nevertheless, there are some generic themes; for example, many barriers to adopting digital practice assessment in placement are ubiquitous.

There are additional limitations to Madden's, Collins and Lander's 2019 study. This was a small pilot of ten final-year student nurses from a cohort of 44. The students who participated in the trial/focus groups were self-selecting. It is possible that those who took part were more digitally literate or willing to embrace technology change than their peers. This may have led to the unanimous preference for e-portfolios versus paper versions. Unlike all the other studies in this literature review, no negative issues or challenges were identified with the change to digital assessment. As final-year students, they are more

experienced and likely to be more confident than first years with completing their practice assessment and their experience may not be shared by the wider student cohort.

The study by Li, et al. (2019) used a simple binary assessment structure in which the student self-rated and the mentor confirmed the student had achieved or not achieved a particular competency. The students articulated that this limited the flexibility of feedback. No mentors or personal tutors evaluated the app, so while it was found to decrease the workload for the course co-ordinator, there is no assessment of the impact on mentors or academics.

The only other paper within the UK by Dearnley, Haigh and Fairhall (2008) reports the experience of 29 first-year midwives (4 withdrew later) and five lecturers, rather than nurses. Again, this was a pilot project to explore the feasibility and identify issues of using mobile technologies to assess health and social care. The research methods are clear, and the paper outlines some problems encountered in implementing an eOAR, particularly as the platform used is the one from which MyProgress was developed at ARU. The assessment of student nurses differs from that of midwives because the regulatory requirements and standards from the NMC are distinct. The paper was published in 2008, but the research was conducted in 2006. Devices available at this time (PocketPC) lacked the functionality of modern mobile technology, which will affect the user experience. This was the only study that explored the experience of the entire community of practice, students, mentors and academics. The students did not invest in the research as they perceived it as short-term and reverted to paper assessment. Useful takeaway findings from this study include that introducing module technology into the clinical setting requires a considerable shift in culture and a substantial level of training and support.

2.3.5 IT literacy of students, mentors and nurses.

The digital literacy of students, mentors and academics is a key concern in adopting an appbased practice assessment platform. There is an incorrect assumption that younger students, digital natives born after 1980, have excellent digital skills and will be more competent in adopting IT (Salajan, Schönwetter and Cleghorn, 2010; Margaryan, Littlejohn and Vojt, 2011). While younger generations have integrated the use of social media and smartphones into their daily lives, these skills are not inevitably transferred into meeting complex digital challenges such as an e-portfolio. Digital immigrants born before 1980 are identified as having limited IT literacy (Salajan, Schönwetter and Cleghorn, 2010). With an ageing NHS workforce and many mentors and academics born before 1980, considerable investment needs to be made in acquiring the IT skills of all stakeholders to ensure successful implementation (Buchan, et al., 2020).

Given the low digital literacy levels of students identified in the literature (Martyn, et al., 2014), introducing digital assessment needs to be made in a stepped progression. Nelson, Courier and Joseph (2011) suggest a three-stage transformation in which first-year student nurses gain fundamental digital skills in software navigational expertise and the underpinning pedagogy. Second-year undergraduates integrate these skills using digital media to complete formative and summative work and other tasks. Finally, third-year undergraduates complete the 'digital transformation' by using reflection and demonstration of innovation and creativity.

Evidence suggests that adopting an e-portfolio requires an integrated approach (Skiba, 2005; Salajan, Schönwetter and Cleghorn, 2010; Light, Chen, and Ittelson, 2011). Less able students require substantially more help and frameworks around work to become independent (Stefani, Mason and Pegler, 2007). Younger students frequently use their social networks for IT support, preferring to use informal and social support networks, while mature individuals seek advice from formal support systems (Poole, et al., 2009). Therefore, it is essential to ensure proper support systems are in place for students, academics and mentors to adopt e-portfolios into nursing curricula successfully.

Successful implementation of an electronic OAR will need to work within what can be, at worst, a digital dessert. The WannaCry cyberattack vividly demonstrated the inadequacy of NHS computer networks in May 2017, which cost the NHS £92m and caused 19,000 cancelled operations (National Audit Office, 2018).

2.3.6 Contextualising the use of MyProgress to ARU nursing students

MyProgress was the digital platform chosen to host the electronic ongoing achievement record (eOAR) for student nurses at ARU. The eOAR is the digital version of the OAR. MyProgress was selected because it addresses several critical barriers outlined in the literature above on implementing digital practice assessment. It works on a desktop

computer or via an app on any android or iOS smart device. Access to computers is not required. Students' privacy can be maintained while undertaking feedback, as it can occur anywhere and at any time the student has access to a smartphone or tablet computer.

MyProgress can collect and collate practice assessments without internet access and can work independently of university and healthcare digital systems and external firewalls. This flexibility enables functioning in areas with poor or no internet connectivity. Offline working is critical; it is usually challenging for student nurses to access any network connection. In many placements, no high-speed data signal is available, and students must be able to receive assessments when they have connectivity, fill them in offline, and sync them back to the server when they are connected again. The student, academic and mentor can access the completed assessments from any internet-connected computer in real-time.

The offline functioning was essential and therefore drove the final decision to choose it for the electronic ongoing achievement record; the 'habitability' of the habitat determined the choice. MyProgress arose out of a community of practice at the University of Leeds School of Medicine and the research undertaken by the Assessment and Learning in Practice Settings (ALPs) programme led by five Yorkshire Universities between 2005 and 2010 to meet their specific needs (Coates and Taylor, 2010). The tool, therefore, already had some existing legitimacy, both regulatory with the General Medical Council and a proven record of success working within healthcare landscapes in the medical community of practice.

The security of signing assessments using an email address was another significant feature for the choice of this application. Mentors used their work email addresses to verify the completion of assessments in the eOAR. In response, mentors received a confirmatory email alerting them to the completion of an assessment using their details. This made it difficult for student nurses to falsify documentation.

2.3.7 Tablet devices

All students in this cohort using MyProgress were provided with tablet devices purchased by ARU. The device provided was an Asus ZenPAD S 8.0 Z580C using the Android operating system 5.0.

2.4 Study rationale and research questions

2.4.1 From the literature review, the following key points emerged:

- Concerns about the validity of practice assessment in terms of the measures of learning and the processes associated with how assessments are completed (Dolan, 2003; Duffy, 2003; Webb and Shakespeare, 2008; Cassidy, 2009; Fitzgerald, Gibson and Gunn, 2010; Miller, 2010; Butler, et al., 2011; Hunt, et al., 2012; Bradshaw, et al., 2012; Wells and McLoughlin, 2014; Burden, 2014; Hauge, et al., 2019).
- Barriers to the adoption of digital practice assessment for student nurses, including issues of societal acceptance (Bogossian and Kellett, 2010; Garrett, MacPhee and Jackson, 2013; Mackay, Anderson and Harding, 2017; Smith and Cambers, 2017; Li, et al., 2019).
- Potential benefits, which include for students immediate feedback on mentor assessments from academics, which is beneficial for their development. (Li, et al., 2019) and formative assessments completed on time (Morgan and Dyer, 2015). For academics and mentors, the advantages include improved transparency in the assessment process and improved ability to track students' progress (Garrett, MacPhee and Jackson, 2013; Madden, Collins and Lander, 2019). Finally, a reduction in the workload of the academic staff with better administration processes (Morgan and Dyer, 2015).
- A shortage of nurses in England (NHS Improvement, 2018), high rates of student nurse attrition and the need to increase retention (HEE, 2018b; Buchan, et al., 2019). The evidence that poor placement experience, particularly insufficient support for students and mentors in placement, contributes to student nurse attrition (HEE, 2018b; Ten Hoeve, et al., 2017; Ashghali Farahani, et al., 2017; Eick, Williamson and Heath, 2012; Hamshire, Willgoss and Wibberley, 2012).
- The contextual nature of student nurse education and the paucity of quality studies around the pedagogy of student nurse e-assessment in the UK and generally.

2.4.2 Study Rationale

The literature review revealed that solutions are needed to reduce attrition and improve the governance of practice assessment by enhancing academics' ability to monitor their students' progress through assessment processes, their engagement with formative assessment and identifying those students and mentors who require support. E-practice assessment offers a potential solution to student nurse attrition by improving social integration between placement and the university, this will be considered in more detail later in this section. There are multicausal reasons why student nurses leave their courses, including finances, academic issues, placement quality and lack of support (National Audit Office, 2007; Williamson et al., 2013).

The RePAIR report (Health Education England 2018), based on an extensive survey of students, identified that placement was the second most common reason, after finances, that student nurses considered leaving their course in years one (16%) and two (11%). This dropped to only 2% in year three. The report also provides recommendations on how to reduce attrition. These include improved support for all students, particularly those in year two and standardising assessment documentation. A study in the Netherlands (Ten Hoeve, 2017) reported similar findings. The key reason student nurses leave is strongly related to the course and, most notably, the lack of support from mentors and the team in clinical placements. A study into what encourages students to stay (Crombie et al. 2013) found several factors that impact retention, including difficulties experienced in practice including a lack of support. Hamshire, Willgoss and Willberley (2013) also explored why student nurses in the UK considered leaving their programme. They received around 1000 responses to an online survey. Over half of student nurses had considered leaving their course. Three distinct reasons emerged: dissatisfaction with high academic workload, poor academic support, and difficulties associated with placements. Interesting and enjoyable placements and staff support were two reasons students chose to continue their studies.

Part one of a two-part review by Manchester University commissioned by HEE North-West of international research within nursing and midwifery (Hamshire et al. 2014) focused on analysing new/current interventions to reduce student nurse and midwifery attrition. Two core themes emerged: setting realistic expectations and providing support mechanisms on campus and within the placement. A student automated mobile texting service has been piloted as one such support mechanism (Boath, et al. 2016). The students (n=77) reported

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that the service increased their sense of belonging to the university. Boath et al. concluded that automated phone texts or similar systems encourage retention. However, there were some unresolved issues with the cost incurred by participants when replying to text messages. An essential element to developing a sense of belonging is high quality mentoring (Royal College of Nursing, 2015).

The use of an app-based assessment tool offers the opportunity to provide much-needed improved support for students and mentors during placements from personal tutors situated within the university. With paper assessment, the academics infrequently tracked student progress in clinical practice. This is because they either needed to visit the student in placement or the student needed to bring their PAD to university. The eOAR offers the opportunity for academics to view the student's practice assessment, including mentor feedback from any computer at any time, without the cost and time involved in travel across ARU's large geographical area. Therefore, academics can identify students who fail to complete formative placement assessments on time and those who struggle. Timely support can then be provided to students and mentors who require it. Support could be provided through messaging via the MyProgress app, targeted placement visits, phone, email or a Microsoft team meeting. The MyProgress app had the advantage over the text messaging service used by Boath et al. (2016). Student responses via the app can be completed offline and synced when connected to wi-fi, thus removing concerns about the cost of replies. Messaging via MyProgress can be to individual students or an entire cohort. Therefore, the social connection between the university, students, and placement can potentially be enhanced as academics, students, and mentors communicate within a single digital habitat.

There is also potential for improving the quality of the assessment/feedback provided by the mentors. This is because mentors can communicate with academics directly via the MyProgress app and can be offered advice/support in completing the student's assessment. In addition, academics can track via their computer when formative assessment documentation is late and send out reminders.

A digital platform is likely to improve the governance of practice assessment record keeping. Before introducing the eOAR vital pages of the PAD were photocopied by students for storage by ARU. This was to ensure that copies of key records were available if students lost the paper documentation essential for achieving registration with the NMC. The method of storage of these records was inconsistent across campuses. On one campus, the nursing course administrators scanned and stored the documents in a single folder for academics; on another, academics scanned the photocopies themselves and stored them on their university computers; on the third campus, paper copies were stored in locked filing cabinets. Tracing or retrieving documents, if needed, was challenging, particularly if personal tutors left.

An eOAR removes the need for photocopying and scanning, reducing the associated time and costs. In addition, a single, secure location for all student placement records can be searched quickly and facilitates GDPR requirements (EU parliament and Council, 2016) for permanent removal when they are no longer required.

Mitchell et al. (2021) undertook a comprehensive synthesis of strategies adopted to support student retention in nursing programs. One recommendation is that support strategies should stimulate community building between students, peers, and faculty. The eOAR offers this opportuning to connect the community of students, mentors and academics through a single media, potentially avoiding the disconnect between university and practice and building relationships and the sense of belonging students need. Throughout their course, student nurses constantly undergo a transition process as they adapt to the expectations of both higher education and the clinical practice environments. Scanlon, Rowling and Weber (2007) found that students who feel socially and academically integrated into both environments are more likely to persist in their studies.

To reap the potential benefits of decreased attrition and improved quality and governance of digital practice assessment linked with the eOAR specifically, understanding of barriers to its adoption in the UK is needed. Only in understanding how to overcome barriers to this innovation will any potential benefits of e-practice assessment emerge. In other words, any benefits cannot be realised if the adoption of the eOAR is not fully realised. Furthermore, as practice assessment requires participation by students, mentors and academics/personal tutors and negotiation between this community research needs to encompass all the participants' experiences and voices.

Whilst there is clear evidence in the literature that adopting an eOAR is fraught with difficulties, there is little information on overcoming the challenges and successfully introducing an eOAR in the UK in nursing courses. Most of the studies about implementing e-practice assessment are pilots and did not proceed because of these challenges. What is

missing from the literature is clear information about the potential benefits if the barriers are traversed and the adoption succeeds.

Therefore, the focus of this thesis is a case study evaluating how the eOAR was adopted within a community of nursing practice. The intention is that lessons will be learnt about how challenges were overcome and the benefits if the adoption is successful.

Whilst there is unambiguous evidence in the literature that adopting an eOAR is fraught with difficulties, there is little information on overcoming the challenges and successfully introducing an eOAR in the UK, particularly within nursing courses. Most of the studies about implementing e-practice assessment are small or pilots and did not proceed because of the severe challenges. What is missing from the literature is clear information about the potential benefits if the barriers are traversed and the adoption succeeds.

The MyProgress app has an advantage over the text messaging service used by Boath, et al. (2016); student responses via the app can be completed offline and synced when connected to wi-fi, thus removing concerns about the cost of replies. Messaging via MyProgress can be to individual students or an entire cohort. Therefore, the social connection between the university, students, and placement might be enhanced as academics, students, and mentors communicate within a single digital habitat.

Therefore, the focus of this thesis is a case study evaluating how the eOAR was adopted by students, academics, mentors at Anglia Ruskin University. The intention is that lessons will be learnt about how challenges were overcome and the benefits to the assessment experience if the adoption is successful.

2.4.3 Research Questions

The principal research objectives for this thesis are:

• To explore the challenges of adopting the eOAR through the application of social learning theories and exploring how the eOAR was used by students, academics and mentors and developed to meet their needs.

- To develop an understanding of how the eOAR was adopted as a pedagogical tool by the nursing community of practice (students, mentors and academics).
- To determine what, if any, benefit digital practice assessment can offer the nursing community of practice.

To address the research objectives the following research questions are posed.

- 1. What is considered legitimate practice in completing the student nurse paper version of practice assessment documents (PAD)?
- 2. Was there divergence from legitimacy identified by the personal tutors and, if so, what was the nature of this divergence?
- 3. Why is electronic practice assessment difficult to introduce in the learning landscape/communities of practice?
- 4. What aspects of electronic practice assessment are perceived as legitimate by academics, students and mentors? How can electronic practice assessment be made legitimate?
- 5. What, if any, benefits can an electronic on-going achievement record offer the community of nursing practice?

Figure 6 Research questions

Chapter 3: Methodology

3.1 Introduction to chapter

The design frame chosen for this research is a single intrinsic case study with a mixedmethods approach. The first half of this chapter focuses on the theoretical scaffold underpinning this case study. In addition, factors relating to rigour in the approach taken are addressed. The second half of the chapter provides a rationale for and outlines the data collection methods and how ethical and legal issues were addressed, including confidentiality, consent, and general data protection regulations.

Yin (2018) argues that a case study is a distinct method and has its own research design. This chapter aims to clarify and justify the approach taken to demonstrate that a rigorous and logical methodological path has been followed.

3.2 Philosophical construction of the research

This section identifies the ontology and epistemology that guided my decision-making in designing this research study. Ontology concerns the nature of being and existence or what is out there to know about (Hudson and Ozanne,1988). It derives from the ancient Greek 'Ontos,' which means being or to be (James, 2015). Norman Blaikie provides a fuller definition submitting that ontology concerns

'Claims and assumptions that are made about the nature of social reality claims about what exists, what it looks like, what units make it up and how these units interact. In short, ontological assumptions are concerned with what we believe constitutes social reality.'

(Blaikie, 2000, p.8)

Epistemology concerns debate about what is knowable and worth knowing; how the researcher uncovers knowledge to determine what is true and false (Grix, 2002). It derives from the Greek word 'episteme'–to know and logos, which means reason (James, 2015).

Plato distinguishes episteme (knowledge of the world that is secure knowledge) from 'doxa' (everyday beliefs or common sense) (Szaif, 2007). Two contrasting epistemological positions are 'positivism' and 'interpretivism.' Positivism asserts that there is a single reality independent of human thought; research adopting this epistemological viewpoint uses a traditional scientific approach based on observable reality, leading to generalisations (Alharahsheh and Pius, 2020). Interpretivism, in contrast, rejects the idea that meaning resides within the world independent of consciousness (Collins, 2018). Interpretivists believe that reality is subjective, multiple and can be socially constructed through shared meaning.

The ontological position in this thesis is relativist. Denzin and Lincoln (2018) describe the relativist perspective as social reality having multiple constructed realities. The relationships and interactions between students, mentors, and academics are the focus of this case study. It examines their construction of practice assessment 'as a negotiation between groups of people' (Galbin, 2014, p. 83). It is believed that meaning is formed through the social interaction of students, academics and mentors and it is in a perpetual state of revision.

Constructivists view knowledge and truth as being created rather than discovered by the mind (Denzin and Lincoln, 2018). In this case study, the students, mentors and academics co-construct meaning it therefore fits within the paradigm of social constructivism.

According to Slater (2017), social constructivism may be traced back to the 1920s work of Max Sciller, who championed the notion that reality is a social construct. Individuals construct distinct interpretations of the same phenomenon. Consequently, there is no singular truth. Moreover, Slater (2017) proposes that social constructivism is influenced by the symbolic interactionism philosophy associated with George Mead and Max Weber. Symbolic interactionism views society as the product of shared symbols, such as language. The theory posits that people respond to elements in their environments based on the subject meanings they attached to those elements. These meanings are created and modified through social interaction involving symbolic communication with other people. In this thesis, the nature of learning and clinical assessment involves the mentors, students and academics in the co-construction of meaning using the language and tools of their craft, as well as assessment procedures and records.

This conceptualisation of meaning is congruent with placing this case study inside the interpretive paradigm. It incorporates similar assumptions to those discussed above, namely

that comprehension of the assessment processes in clinical nursing practice is built by people engaged in the activity and the environment in which it is conducted. There are multiple realities of the truth and a singular truth cannot be discovered.

3.3 Defining a case study

Case studies can be situated in either the interpretivist or positivist paradigms. Table 1 below summarises prominent case study researchers, their underlying epistemology and case study design types. The several types of case study designs and the rationale for the approach adopted in this thesis are evaluated below.

Yin (2013a) defines a case study as "an empirical enquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident". This definition deftly captures the distinctiveness of the case study as a research method; unlike an experiment it does not attempt to isolate the phenomenon from its context. Yin (2013a, p.17) postulates that case study methodology embraces a range of epistemological orientations while identifying that he writes from a realist standpoint. Yin attempts to impose quantitative concepts of validity on case study research. I would argue that the concepts of validity are overly simplistic for educational and clinical practice settings and that alternative definitions of quality need to be considered. However, Yin also acknowledges that case study research can accommodate relativist perspectives. Yin's (2013a) research, like that of Flyvbjerg (2006) and Eisenhardt (1989), is post-positivist. These researchers emphasise the importance of control, predictability, and rationality (Crabtree and Miller, 1999).

	Definition	Types of case study	Epistemology
Stake (1995, p.xi)	"Case study is the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances"	Intrinsic Instrumental Collective	Interpretivism / inductive Qualitative
Ragin and Becker (1992, p.5)	"Thecase-orientated approach places cases, not variables, centre stage. But what is a case? Comparative social science has a ready-made, conventionalised answer to this question: Boundaries around places and periods define cases (e.g., Italy after World War II).		Middle ground between post positive and interpretivist
Merriam (1988, p.16)	"The qualitative case study can be defined as an intensive, holistic description of a single entity, phenomenon or social unit. Case studies are particularistic, descriptive, and heuristic and rely heavily on inductive reasoning in handling multiple data sources"	Descriptive Interpretive Evaluative	Interpretivism / inductive
Yin(2013a, p.13)	"A case study is an empirical enquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident."	Explanatory Illustrative Exploratory Meta- evaluation	Post-positivism
Gerring (2017, p.12)	"a case study is an intensive study of a single case or small number of cases which draws on observational data and promises to shed light on a larger population of cases."	Exploratory Estimating diagnostic	Positive—Post- positivism Quantitative

	Definition	Types of case study	Epistemology
Simons (2009, p.21)	"Case study is an in-depth exploration from multiple perspectives of the complexity and uniqueness of a particular project, policy, institution, programme, or system in a 'real-life' context. It is research-based, inclusive of different methods and is evidence lead. The primary purpose is to generate an in- depth understanding of the specific topic (as in a thesis), program, policy, institution or system to generate knowledge and/or inform policy development, professional practice and civil or community action."	Theory led Theory generated Evaluation Ethnographic	Interpretivism / inductive
Thomas (2015, p.23)	"Case studies are analysis of persons, events, decisions, periods, projects, policies, institutions or other systems which are studied holistically by one or more methods. The case that is the subject of the enquiry will be an instance of a class of phenomena that provides an analytical frame - within which the study is conducted and which the case illuminates and explicates."		

Table 1 Epistemology of case study

In contrast, Stake (1995) and Merriam and Tisdell's (2015) approach case studies from a social constructivist perspective. Quality case study research, according to Stake, combines 'naturalistic, holistic, ethnographic, and biographic research methods' in a bricoleur design, in his words, 'a pallet of methods' (Stake, 1995:pp. xi-xii). Thomas (2015) has a similar perspective, suggesting that "analytical eclecticism" is the defining factor. Stake comments that as a type of research, the case study 'is defined by interest in an individual case, not by the methods of inquiry used' and that 'the object of study is a specific, bounded system' (Stake, 1995). From this definition, the ontology, epistemology, and methodology fundamental to single case-study research principles can be deduced.

First is the importance of 'boundedness' in the individual unit. Van Wynsberghe and Khan (2007) concur with Stake (1995) that case study research is not prescriptive in terms of its structure, content and data collection methods and so cannot be defined in these terms. They instead agree that case studies should be viewed as a research strategy that tries to capture the complexity of relationships, beliefs and attitudes within a bounded unit, employing different methods of data collecting and is likely to explore multiple perspectives. Merriam provides an alternative definition focused on the product of the research: 'A gualitative case study is an intensive, holistic description and analysis of a single instance, common phenomena and common of social units' (Merriam, 1988, p.xiii). A decade later, she revised her definition to focus on the case as opposed to the outcome, recognising that the most crucial component of case study research is determining that a case is a bounded unit. She writes that the case is 'a thing, a single entity, a unit around which there were boundaries, I can 'fence in' what I'm going to study' (Merriam, 1998, p.27). Thomas (2015) provides clarification by identifying two Latin definitions of case, capus and casus. The former, capus - meaning 'box', he likens the case to a 'suitcase'-a container that is 'bounded'; once the case's lid is shut, we can study everything enclosed within, nothing more or less. The latter term, casus, refers to a specific incident, event, or a collection of circumstances surrounding it.

Case study methodologically is often perceived as more of an interpretivist tool and it has also frequently been associated with a qualitative approach (Bryman, 2016). As Yin (2013a) notes, case studies can be exploratory, descriptive, or explanatory, like all forms of social science research. If a case study design can dependably perform any or all three functions, they should not be restricted to a single research paradigm. Exploratory and descriptive

case studies are often qualitative and inductive, whereas explanatory studies are more commonly quantitative and deductive (David and Sutton, 2011). It may be better to conceive case studies as bridging the two paradigms.

Stenhouse (1979) was an early proponent of the using case studies in education research, claiming that they captured the complexity of educational problems. Emerging approaches to case study during this period were influenced by ethnographic ideas. Typically, ethnographic case studies entail prolonged involvement with a group, during which the researcher is immersed in the everyday lives of the group members (Hamel, Dufour and Fortin, 1993). Stenhouse (1979) argued that some ethnographic assumptions did not apply to education. These assumptions were that the researcher would be unfamiliar with the contacts in scenarios to be investigated, that researchers attempt to draw on theory from ethnography rather than education and that they would not normally make copies of their field notes available. In education case studies, he argued that the researcher is frequently familiar with the circumstances within which the research is conducted and that there should be limitations placed on applying theory specific to other disciplines. Finally, he believes that for the research to be verifiable, field notes are an essential study record and must be made available. Several of Stenhouse's assertions apply to this case study. As an experienced academic with 12 years of experience within higher education and a professional nurse (with 17 years of clinical nursing experience before this within the local community). I was familiar with the educational and practice settings in which this research was undertaken. Unlike Stenhouse, the theories and philosophical beliefs I hold are shaped by various fields because, with a background as a nurse and an academic, I draw on several disciplines.

Adhering to a post-positivist orientation, Yin (2013a) advocates employing a formal, conceptual framework with hypotheses that are tested, approved, or rejected as data are gathered and analysed. Consistent with a constructivist orientation, Stake (1995) advises that researchers may use a conceptual framework to guide research, but it is not required. With Stake's approach, the investigator may create issue statements, but they are not necessary. I deliberated whether using a conceptual framework, as suggested by Yin, would restrict data gathering and analysis. On the other hand, I was also concerned that Stake's epistemological approach to case study closely aligns to that of the philosophical construction of this research, which influenced my choice.

As Stake's recommends, I started with a relatively unstructured conceptual framework that was malleable. The rationale for this was that until I began investigating the case, I assumed the questions would move or change as data collecting and analysis progressed because, until I investigated the case, I could not completely comprehend what the case would disclose.

Wenger-Trayner, et al. (2015), in 'Learning in Landscapers of Practice", sets out learning as a journey through the living landscape of practice. Grounded in social learning theories, the authors sketch a picture of practice learning, which is contextual and within boundaries. They highlight that professional occupations are not a single community, but a complex landscape encompassing a range of domains in professional practice and embraces other related dimensions, including research, teaching, management, and regulations. Brown and Duguid (2017) distinguish between the close-knit community of practice and the more complex 'network of practice' with distinct social structures, a multiplicity of practices and boundaries across which knowledge must be transmitted.

Knowledge in this research was not what would typically be interpreted as classical situated learning (Lave and Wenger, 1991); the study aimed not to evaluate how students (novices) learn about professional practice from their mentors (experts). The entire ecosystem (mentors, students and academics) simultaneously learned how to use a digital platform for practice assessment. The learning occurred within the real world, was complex and was influenced by the social situations in which it occurred. Using case study facilitated an exploration across the entire ecosystem to determine what kinds of social engagement provided the most fertile ground for learning how to use the eOAR and hopefully assuring its successful adoption.

3.4 The use of mixed methods in the case study

This research adopted a mixed-methods case study methodology. There is no consensus on a single definition of mixed methods research. Greene, Caracelli and Graham (1989, p.256) emphasise the significance of the method by defining "mixed methods design as those that include at least one quantitative method (designed to collect numbers) and one qualitative method (designed to collect words) where neither type of method is inherently linked to any particular inquiry paradigm." In contrast, Johnson and Onwuegbuzie (2004, p.17) emphasise the methodology writing, "mixed methods research is formally defined here as a class of research where the researcher mixes or combines quantitative and qualitative research techniques methods, approaches, concepts or language in a single study". Creswell and Plano Clark (2017) include both method and methodology in their definition.

"Mixed methods research is a research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical assumptions that guide the direction of the collection and analysis of data and a mixture of qualitative and quantitative approaches in many phases of the research process. As a method, it focuses on collecting, analysing and mixing both quantitative and qualitative data in a single study or series of studies."

(Cresswell and Plano-Clark, 2017, p.5)

The rationale for using a mixed-methods approach was twofold. The first because collecting data from distinct groups within the system (students, mentors, tutors) necessitated distinct methods to develop an in-depth and multifaceted comprehension of the case. The second reason was the nature of the research questions; some required a distinctly qualitative interpretivist approach while others quantitative inquiry. Therefore, this study is multimethod, as it employs a combination of qualitative and quantitative research approaches, as opposed to mixed methodology as the philosophical assumptions are interpretative throughout.

Appendix 5. revisits the research questions and relates them to the data collection methods.

3.5 Addressing the limitations of case study research

3.5.1 Methodological hierarchy

All research methodologies have strengths and weaknesses. Case study has been unfairly devalued by comparisons to statistical methods (Jensen and Rodgers, 2001; Pitariu, Andrei and Guran, 2009; Tight, 2010; Flyvbjerg, 2006). It is reputed to be the "weak sibling" compared to other, more rigorous approaches (Yin, 2013b, p.xiii). Thomas (2015) argues that case study research is not statistical, and its purpose is not to generate results that are generalisable to all populations. Comparisons between case studies and statistical research contribute little to the advancement of this approach and fail to acknowledge its inherent value, which can be better understood from the interactive, constructive perspective (Stake, 1995; Merriam and Tisdell, 2015).

Yin (2013a, p.7) challenges this perception, arguing that there are both explanatory case studies and some highly influential exploratory case studies in political and social science research. Selecting a methodology or measuring a research method's value on this hierarchical premise is therefore inappropriate. Instead, Yin postulates that the choice of method should be based on three alternative premises: the research questions, the degree of control the researcher has on the actual behavioural events and, finally, whether the events are historical or contemporary.

As the preceding discussion has demonstrated, the advantage of case study research is a degree of artistic liberty that fosters creativity and reflexivity, which particularly applies to an innovation research project (Denzin and Lincoln, 2018). Furthermore, as case study research is a haven for mixed methods research (Denzin and Lincoln, 2018), it offers an approach which permits qualitative and quantitative questions to be answered within a single paradigm. This allows the selection of the approach to be chosen in accordance with the research questions, increasing both breadth and depth of investigation.

3.5.2 Rigour

This section will address three frequent criticisms of case study research: lack of rigour, subjectivity, and an inability to generalise findings.

Realist perspectives are incompatible with positivist quality assessment standards of validity, reliability and replicability (LeCompte and Goetz, 1982); hence, alternative strategies for assessing the quality of qualitative inquiry are required. Lincoln and Guba (1985) suggest that establishing the trustworthiness of a research report is at the heart of quality in qualitative enquiry. Lincoln and Guba (1985) propose evaluating trustworthiness based on its credibility, transferability, dependability, and confirmability.

The credibility of this research is based on the researcher's three years of leading and researching the implementation of the eOAR in the field. The concept of prolonged engagement is associated with anthropology studies such as Margaret Mead's (1980); it enables research studies to go farther into the investigation of the phenomenon (Given, 2008).

This prolonged engagement allowed me to explore multiple constructions of reality and become acquainted with the various ways in which the participants perceived their encounters with the eOAR. The objective was to acquire a deeper understanding of the meaning through the perspective of the people who understood it best: students, mentors and academics. Given (2008, pp.21), indicates that in prolonged immersion, it is vital to demonstrate what she refers to as 'truth value'. To do this, she suggests researchers immerse themselves in the rituals and everyday interactions of the community in order to portray the multiple constructions of reality adequately. In this process, she believes inconsistencies can be resolved and other perspectives can be examined.

To demonstrate truthfulness within this thesis, I have described the multiple constructions of the respondents using their native language. As I was simultaneously leading the SEA project while conducting research for this case study, the immersion stretched beyond the confines of the case. On a weekly, if not daily, basis, I educated and supported new users of the eOAR and resolved issues. To ensure the truthfulness of the findings, I reflected on emerging ideas during casual talks with mentors, students and academic colleagues using the eOAR, who I encountered daily. In addition, I reflected on the findings in discussions with

my supervisors and researcher community informally as well as in formal presentations at conferences.

Goffman's description of how prolonged immersion leads to truth discovery because you truly understand what the participants are talking about resonated with my research experience.

"You're empathetic enough - because you've been taking the same crap they've been taking—to sense what it is that they're responding to. To me, that's the core of observation if you don't get yourself in that situation, I don't think you can do a piece of serious work"

(Goffman, 1989, p. 126)

I felt like I consumed, slept and breathed the eOAR for over three years. Every concern raised about the eOAR from all users rested at my door as I was responsible for solving them. As time passed, I also had the reward of students, mentors and academics conveying the positive benefits.

Transferability is achieved by providing a detailed, rich description of the study setting so that readers can judge the applicability of the findings to their domain. So that the reader can assess the dependability and confirmability of the research, an audit trail detailing the procedures used to collect, analyse and interpret the data and how this led to the conclusions drawn during this research is provided. Creating the audit trail was an exercise in critical reflexivity as I consistently examined my judgements throughout the research process.

Triangulation is commonly presented as a way to improve the quality of research. It was popularised by Denzin (2009). Hammersley and Atkinson (2007, p.290) define it as "combining multiple theories, methods, observers and empirical materials to produce a more accurate, comprehensive and objective representation of the object of study." According to Blaikie (1991), triangulation only makes sense within a positivist paradigm. His criticism from a constructivist perspective is that every reading of a text is likely to produce a new

interpretation, with no version assuming a privileged position. Dubois and Gadde (2014) also align triangulation and member checks with positivistic research concepts to secure a single 'true' version of reality. The argument presented by Silverman (2006) moves triangulation toward a constructivist paradigm. He points out that triangulation can deepen understanding, as certainty about knowledge is impossible, or all beliefs can be mistaken. This fallibilistic approach moves triangulation into a realist frame. Silverman (2006, p.158) argues that triangulation can help "to address the situated work of accounts" as opposed to "using one account to undercut the other". Dingwall (1997) also situates triangulation within constructivism by advising that triangulation provides a mechanism for illuminating how accounts and actions in one situation are influenced or constrained by those in another.

In this study, multiple research approaches were used to obtain information from distinct groups within the social system. Triangulation of data was not undertaken because no attempt was made to draw more reliable conclusions about a phenomenon by directly comparing the results acquired from quantitative and qualitative approaches or between gualitative methods. From a realist perspective, this comparison would have assumed that a single truth could have been constructed from all users and that the truth or reality would be the same for all parts of the ecosystem (mentors, tutors, and students). Instead, a process of complementarity (Creswell and Plano Clark, 2017) was used to generate a comprehensive, holistic view of the case by comparing the data acquired by diverse approaches to construct a multifaceted understanding of the case. The premise was that it might be possible to construct a reality for each group, but it would not be possible to establish an objective truth applicable to all groups. Consequently, the focus was on elucidating where different levels of users within the community intersected and differed in their adoption of the eOAR. Without these lenses, a one-dimensional image would have been created. This would have been inadequate in providing the researcher with the means to 'interpret' what is perceived. According to Webster and Mertova (2007), the true test of the validity of the interpretation is whether the readers find the account contained in this dissertation credible. In this chapter, I present a full overview of my position so that readers can form their own judgement.

3.5.3 Subjectivity, the position of the researcher within the research.

Simons (2009) emphasises the centrality of 'self' in a single case study approach. She defines self as 'the inner sense of knowing who we are and what is important to us-those values, emotions and ways of thinking and being that affect how we live and act' (p. 82). Peshkin (1988) suggests that subjectivity is inevitable in research. Rather than seeking to eradicate it, a researcher should actively seek it out and evaluate how it may influence the inquiry and conclusions.

My interaction with the participants being examined within the bounded cases was an important part of the investigation. These relationships were essential to the investigation and formed one component I used to collect that data and influence the analysis. Hammersley and Atkinson (2007) reasoned: When we discard the notion that the social character of research can be standardised out or evaded by becoming a 'fly on the wall' or a 'full participant,' the position of the researcher as an active participant in the research process becomes apparent.

The traditional view of 'subjectivity' derived from logical positivism views 'bias' as an element to be eliminated or managed. I led the project introducing MyProgress within the Faculty. I was deeply involved in and interacting with the data that were collected. My closeness to the case required that I consider the beliefs and values I brought to the study. Rather than treating subjectivity as a component that needs to be controlled, I perceived it as a component of how I understood the case. It provided a unique privileged and in-depth perspective that served as a valuable resource. It would have been impossible to undertake this research in any other environment, as the case is unique. I recorded frequent vignettes in my reflective diary of knowledge only available because of my privileged position.

There were risks with being so engaged in the case in how far my perceptions may distort the findings. Reflexivity was an essential tool that I used to understand the contribution I made to and on to the research. While my position enabled ease of access to the students, mentors, academics and additional project documentation simultaneously, I continually reflected on the risks. As Director of Learning, Teaching and Assessment in the Faculty, the student nurses may have seen me as being in a position of authority, although I was not actively engaged in teaching or assessing the cohort's work. Most of the academics I had worked with for years as a peer until my recent promotion. I was conscious that my position might have impacted their interview contributions. The ethics committee had no such concerns. The research is about the eOAR and not about the individual skills, knowledge or ability of the students, tutors or mentors and I made this clear to all the participants. My position enabled me to gain richer data. Tappan (1997, p.651) eloquently describes how I viewed my position; 'the interpreter's perspective and understanding initially shape his interpretation of a given phenomenon, but that interpretation is open to revision and elaboration as it interacts with the phenomenon in question. As the perspective and understanding of the interpreter develop, his biases and blind spots are revealed and evaluated.'

There were risks of being so engaged with the case in how far my perceptions may distort the findings. Reflexivity was an essential tool that I used to understand the contribution I made towards and had to the research. While my position enabled ease of access to the students, mentors, academics and additional project documentation at the same time, I continually reflected on the risks.

3.5.4 Generalising from case studies

The apparent inability to generalise the findings is further criticism levelled against case study research. According to Yin (2013b, p.21) case study "does not represent a 'sample' and the investigator's goal is to expand and generalise theories (analytic generalisation) rather than extrapolate probabilities".

Traditional statistical research methods generalise findings. The problem with studying a single case has always been establishing external validity (Miles, Huberman and Saldaña, 2020). Case study research focuses on pattern and meaning within a specific context. However, it is essential to note that a case study involves generalising theoretical propositions rather than populations (Bryman, 2016). This perspective implies that case study findings are tested, revised and illustrated on conceptual rather than statistical grounds.

Cornfield and Tukey (1956) and Kennedy (1979) present two concepts of generalisation. The first concept is a 'statistical bridge', which connects the sample to the population from which it is assumed to be drawn. The other bridge could be viewed as a link connecting the cases studied to a population thought to be sufficiently similar to the cases investigated. Because this is a single case study, I cannot make broad generalisations across the first bridge, but I hope this research will be useful across the second. The difficulty for case study researchers has been defining rules for how this is to be done. Simons (2009) offers advice from an interpretive perspective, which is followed in this dissertation; to generalise from a single case study in one setting, sufficient context must be provided so that others can engage in relating issues arising in the case to comparable contexts or for their own purposes. The detailed account I provide of the context in which the eOAR was adopted will enable the reader to compare if and how it connects with their environment.

3.6 Ethical approval and governance

Researchers must adhere to legal and ethical requirements and principles. Compliance with the UK Data Protection Act (UK Government, 2018) is mandatory. It is the researcher's responsibility to ensure the integrity and security of research data.

In addition, research in health or social care must comply with the UK policy framework for health and social care research (NHS Health Research Authority, 2017). This policy applies to health and social care research involving patients, service users, relatives or carers. This case study does not include patients or patient information, although it includes data from nurses/mentors working in clinical practice. A check using the Health Research Authority (HRA) approval tool (Medical Research Council (MRC) Regulatory Support Centre and Health Research Authority, 2017) and confirmed via trust governance established that for the HRA framework, the survey data collected from mentors was viewed as service evaluation rather than research and therefore did not require HRA approval (Medical Research Council (MRC) Regulatory Support Centre, 2017) (See Appendices 4 and 5). Mentor access was facilitated via Practice Education Managers employed in each placement trust.
The complexity and sequential nature of the case study required three separate applications for university ethical approval. Each application covered a separate research segment with a unique set of ethical issues.

Ethical approval was granted as follows.

- Departmental research ethics panel 11th March 2016 for qualitative data collection for student focus groups and tutor 1:1 interviews (Appendix 8)
- Departmental research ethics panel 8th August 2017 approval granted for using data analytics from MyProgress. (Appendix 8b)
- Faculty research ethics panel 12th September 2018 approval granted for Mentor Survey. (Appendix 8c)
- As this case study involved digital data and student records, key issues about data confidentiality (student engagement records, assessment outcomes, online survey responses) and informed consent were addressed.

Participant information sheets (Appendix 10 and 11) were provided and consent forms were completed for the student focus groups (Appendix 12) and academics 1:1 interviews (Appendix 13). Consent for the mentor survey was integrated with the questionnaire (Appendix 18).

3.6.1 Data confidentiality

The ethical risks linked to student engagement data/learning analytics analysis gathered via the MyProgress system were limited. The researchers' employment contract covered this work at Anglia Ruskin University, where all employees must comply with Anglia Ruskin University Data Protection Policy (2018). Student consent is required for the collection and use of "special category data", such as ethnicity, as defined by Council Regulation (EU) 2016/679 (European Parliament and Council of the European Union, 2016). The data used and collected from the MyProgress analytics was about user engagement and not personal information, so it is not 'special category data. Data extracted from the MyProgress analytics included:

- Date and time of assessment submission
- Ordinal quality score of assessment feedback
- Total number of assessments completed on time
- Total number of assessments not submitted on time
- The number/percentage of active users (that submit formative assessments weekly)
- The Statistical significance of student engagement and success (pass/fail) in assessments.

3.6.2 Confidentiality and consent for the use of learning analytics

The UK Data Protection 2018 (UK Government, 2018), based on the EU's General Data Protection Regulations (Council Regulation (EU) 2016/679, 2016), situates the context for data collection and use from a legal perspective. Anglia Ruskin University complies with GDPR and has policies for processing students' personal data. To process personal data, provisions must be met; one of these is gaining the informed, free consent of the individual. There are two conditions where specific consent is not required concerning learning analytics. Processing personal data without consent can be justified on the basis that:

- 1. It is necessary for relation to a contract that the student has entered into, or
- 2. The processing is assessed as being in the "legitimate interests" of the organisation.

It is based on the two conditions above that the user analytics from MyProgress was analysed. When registering for the BSc Hons course, the student enters into a contract with ARU. To discharge this contract, ARU needed to manage specific data, including the student's name, date of birth, address, and the modules they took. In recording digital practice assessment, activity records were created, which are a vital component of providing the contracted service and are gathered in Anglia Ruskin's legitimate interest in ensuring that systems and resources are not misused. When using legitimate interest as justification, the law affords additional protection by requiring that the organisation's interests be balanced against any risk to the interests of the individual. To satisfy this balancing test, the law requires that data processing should minimise the impact on individuals (Sclater, 2015).

The use of MyProgress learning analytics satisfies this balancing test. It is in the organisation's legitimate interests to process this data to benefit both current and future cohorts of students. It is used to identify improvements that can be made in the assessment/course to improve student outcomes and experience. The processing data from MyProgress, as described above, was designed so there was no impact on any students.

3.7: Research methods

3.7.1 Case selection

This thesis is based on an embedded intrinsic single case study, as illustrated in figure seven. Stake (1995) emphasises the importance of the single case: "Case study is the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances." Stake also delineates case studies into two primary forms, intrinsic or instrumental. An intrinsic case study attempts to capture the case in its entirety, and the purpose of the research is to understand more fully the departments and institutions that make that the case. Instrumental case studies, by contrast, focus on aspects concerning an issue of the case.

As previously highlighted, limits or boundaries are a defining factor of case study methodology (Kennedy, 1979; Ragin and Becker, 1992; Stake, 1995; Simons, 2009; Yin, 2013a; Merriam, 1988). Therefore, an adequate contextual description is required to understand the setting or context in which the case is revealed, as the case context is important to understanding the holistic system. Information such as the physical, institutional, political and community setting are required to improve the understanding of the case (Stake, 1995). In empirical inquiry, the researcher selects the research. Dubois and Gadde (2014, p.1280) state that in case study research, the case selects the researcher "because the researcher is connected in a particular reality that provides the opportunity for identification and exciting research." This statement particularly echoes the reason for this case selection–it chose me. At the start of the study, this case study centred on student nurses enrolled in the second year of the BSc Hons in BSc Nursing at Anglia Ruskin University. The choice of case was made because I was intrinsically interested in this particular case because I was leading the project adopting the eOAR. The sample included Adult, Child and Mental Health Students who used the eOAR for their practice assessment. For the first year of their degree, the students had previously used the original paper version of the same document. The students were allocated to a wide variety of placement areas, including community and hospital settings.



Figure 7 Illustration of the embedded single case study design

This research used a single intrinsic case study (figure 7). I chose one issue, the adoption of the digital practice assessment of undergraduate nurses' on-going achievement record using MyProgress and selected a unique bounded case to illustrate the problem. Time, location and cohort bound the case. I chose this approach because of its ability to integrate the complex and variable phenomena of the on-going digital achievement record implementation and evaluation across a range of placement areas. I did not want to tell the individual story of each setting, which would result in separate case studies (collective case study).

3.7.2 Sample selection-students

The cohort of BSc Hons in nursing second-year students bounded in this case study included n=157 students at the start of the research (table 2).

Cohort number	Specialism	Number of students
1	Adult	21
2	Adult	23
3	Adult	22
4	Adult	17
5	Adult	22
6	Child	21
7	Mental Health	31
	Total	157

Table 2 student cohorts

The number of students in the cohort modulated throughout the two years of participation as students intermitted, left or joined the group from earlier cohorts. The data analytics used for quantitative analysis included data for the entire cohort. The sample was purposefully nested within the bounded cohort for the focus groups. Twelve student nurses consented to participate in the focus groups. All 157 students in the group were invited to participate, all those who volunteered were included. In qualitative studies, a fundamental principle influencing the sample size is that it should be sufficiently large and diverse to generate rich, dense, focused data to enable the researcher to present a convincing account of the phenomenon (Curtis, et al., 2000; Walsh and Downe, 2006). The dilemma is that too few participants provide inadequate breadth and depth, while too many may produce superficial or unmanageable volumes of data (Sandelowski, 1995). Twelve students were considered to provide an optimal data set (who will be referred to in the dissertation as Student 1 (S1) through to Student 12 (S12). Morse (1991, p.129) states that 'when obtaining a purposeful (or theoretical) sample, the researcher selects a participant according to the needs of the study' (p.129). The desire to include a range of participants with the entire range of experiences was met by the participation of students of varied ages, placement experiences and gender.

3.7.3 Sample selection-tutors

Kvale (1996) advises that you should "Interview as many subjects as necessary to find out what you need to know." Participants are selected to gain as broad a range of perspectives as possible. Data collection continues until no new insights are generated. While I coded and collected new data simultaneously, I was conscious that there was a limited pool of academics from which to sample, so data saturation and theoretical sampling was potentially unachievable.

The bounded case included seven tutor group undertaking three undergraduate nursing programs, five BSc adult nursing, one BSc mental health nursing and one BSc child nursing. There is a smaller intake of child and mental health nursing students at the university; this ratio represents the normal distribution at ARU. Two of the seven personal tutors supporting the students consented to participate in the research. Of the remainder, one tutor had retired, one had left the university, one was on long-term sick and two did not wish to participate. It was evident that the data from the two participants was insufficient to fully explore the academic experience of the eOAR. As the study unfolded, the boundary, therefore, needed reconsideration. To acquire a broader perspective, consent was sought from tutors who had supervised students in the second cohort of students who used the eOAR. Interviews were conducted with six personal tutors (two supporting the first cohort using the eOAR and four from the second cohort). Stake's (1995) loose conceptual framework permits the flexibility of this boundary, which highlights one of the strengths of this approach. In the event, this pragmatic approach gave me the depth and breadth of data I required without shifting the boundaries too far.

It should be noted that a consequence of interviewing tutors who experienced the eOAR for the first time one year after its first implementation is that they did not share the same initial teething problems as the first cohort of students and mentors. I reflected on their inclusion in the case study and concluded that omitting the additional tutors' insight would have resulted in an incomplete picture of the case.

3.7.4 Sample selection mentors

Each of the 157 students in the cohort was assigned at least one mentor to each placement area. Some students were allocated additional mentors if their primary mentor was absent (e.g., holiday, sickness), or they were given a trainee mentor. Students had five different placements during the study period, so they will have each worked with a minimum of five mentors. Some mentors will have been assigned to more than one student during the study. All mentors in Cambridgeshire were invited to participate in the survey. A screening question identified the mentors who supervised a student in the cohort within the bounded study. A total of 128 mentors consented and completed the survey. Of these, 62 were identified as supervising students in the bounded case and included in the research. Mentor participation was anonymous, so mapping mentor data to the student data is impossible.

3.8 Data collection

Strand	Data Collection Method	Dates	Participants	Sample
1a	Focus groups	4/5/2017 20/06/2017	Students Student	2 focus groups 11 participants 1 interview Total students n=12
1b	Interviews	17/04/2018 to 02/08/2018	Personal Tutors	n=6
2	Data analytics Formative Submissions	Data snapshot 03/10/2017 Data collection period 28/08/2016 01-09-17 to	E-PADs (MyProgress)	n =157 Adult = 105 Child = 21 MH = 31

A summary of the data collected is contained within table three below.

Strand	Data Collection Method	Dates	Participants	Sample
3	Digital Survey	06/11/2018 To 29/11/2018	Mentors Total Hospital Mentors Community Mentors	n= 62 n= 33 n = 29
4	Curriculum Documents			3

Table 3 Data collection summary

3.8.1 Student focus groups

Focus group interviewing is a data collection technique that capitalises on group interaction and discussion between participants (Kitzinger, 1995; Lichtman, 2017). The introduction of focus groups as a social science research method can be traced back to the work of Merton in 1956 (Merton, Fiske, and Kendall, 1990).

> "The essential purpose of focus group research is to identify a range of perspectives on a research topic, and to gain an understanding of the issues from the perspective of the participants themselves. "

> > (Hennink, 2014 p.6)

This data collection method was selected to encourage participation from student nurses who might be reluctant to be interviewed on their own. Focus groups encourage participants to talk to each other, sharing experiences, ideas and anecdotes (Kitzinger, 1995). This data collection method helps explore what the students know, what they think about the eOAR and why they think that way. Drawing on interpersonal communication is beneficial because it can highlight cultural values or group norms. Examining group interaction and narrative, the use of humour, where consensus and dissent are clear, enables the researcher to identify collective knowledge. The data collected from a focus group is, therefore, socially constructed. Within the interaction of the group and as a data collection method, it is, therefore, embedded within a constructivist perspective. Merriam and Tisdell (2015) suggests that focus groups are beneficial when working with a group who may feel disempowered and are reluctant to give negative feedback or may be concerned that any

issues may be a consequence of their incompetence, e.g., their digital literacy and ability to use the Samsung tablets. Hearing the student experience, warts and all, in using the eOAR was essential to understand its adoption into the community of practice fully.

Bryman (2016, p.520) describes some disadvantages of focus groups; the interviewer has less control than in an interview. Reticent speakers may not contribute, and others may dominate the conversation. They are challenging to organise, and participants may not show up. While decreased control can be perceived as a disadvantage, others see it as a benefit because the participants feel a sense of 'ownership' (Kamberelis and Dimitriadis, 2005). It was essential to moderate the group to maintain the balance between freedom and steering the discussion around the written guide to answer the research questions. Bloor, et al. (2001) suggest that focus group sessions are more challenging to transcribe; an hour-long session can take up to eight hours. In addition, there is an increased risk of inaudible data with participants talking over each other. For these reasons, both focus groups were audio and video recorded (so it was possible to track who was speaking). Videoing the focus group could have impacted the students' contributions; the camera was discreet and did not appear to inhibit the discussion. The recordings were transcribed verbatim by the researcher.

There are no specific rules for the composition of a focus group. Merriam and Tisdell (2015) suggest that six to ten participants are ideal. All students in the Sept 2014 cohort were invited to take part. Six students had agreed to participate in the first focus group. As is often the case with qualitative data collection, all did not run smoothly. Two students did not attend. Before the focus group commenced, one student said that she wanted to participate in the research but, because of having dyslexia, did not want to discuss her use of the eOAR in a group with other students. This is a disadvantage of focus groups because participants may not want to disclose information within a group. I, therefore, conducted a one-to-one interview with this student so that her voice could be heard and, at the same time, maintain her confidentiality. The first focus group proceeded with three students. In contrast, six students had initially agreed to participate in the second focus group. Two additional students turned up unexpectedly, encouraged and motivated to come along by peers in their cohort. The second focus group comprised eight participants. The composition of the focus groups can be seen in table four below.

Student	Date	Gender	Programme of study	Data Collection	Additional Learning needs
1	4/5/2017	Female	Mental Health	Focus Group 1	
2	4/5/2017	Female	Mental Health	Focus Group 1	
3	4/5/2017	Female	Mental Health	Focus Group 1	
4	4/5/2017	Female	Adult	Interview	Dyslexia
5	4/5/2017	Male	Adult	Focus Group 2	
6	4/5/2017	Female	Adult	Focus Group 2	
7	4/5/2017	Female	Adult	Focus Group 2	Dyslexia
8	4/5/2017	Female	Adult	Focus Group 2	Dyslexia
9	4/5/2017	Male	Adult	Focus Group 2	
10	4/5/2017	Female	Adult	Focus Group 2	Digital Scholar
11	4/5/2017	Female	Child	Focus Group 2	
12	4/5/2017	Female	Child	Focus Group 2	

Table 4 Student participant details

The focus groups were based on a semi-structured format. They were used to generate discussion on the student nurses' experience using the MyProgress app on the ASUS tablet or a desktop computer. I also sought to uncover their thoughts, feelings and experience of working with their mentors using the eOAR. The discussion was used to debate the benefits and challenges. The students were actively engaged in the discussion in both groups, providing a well-articulated viewpoint of their shared world. The focus group schedule can be found in Appendix 15.

3.8.2 Tutor 1:1 semi-structured interviews

Data was collected from the tutors during in-depth interviews. Taylor, Bogdan and DeVault, (2016) describe qualitative interviews as a face-to-face meeting of the researcher and participants to understand the participants' perspective of experiences, articulated in their own words. Seidman (1998:p9) states that "the root of in-depth interviewing is an interest in understanding the lived experience of other people and the meaning they make of that experience". deMarrais and Lapan (2004) depict the interview process as a conversation between the researcher and participant in which the focus is on the research study.

Interviews are frequently used for data collection in qualitative educational and social research. Taylor, Bogdan and DeVault (2016) suggest that in-depth interviews are especially well suited when, as is the situation in this study, the research interest is well-defined. Interviews have the advantage over focus groups and questionnaires of allowing the researcher to engage with the participants individually and facilitate the collection of a range of information, including facts, opinions and personal narratives (Atkins and Wallace, 2012). Bell (2018, p.210) advises that another notable value of the interview is its flexibility. A competent interviewer can explore and clarify ideas expressed and probe for motives and feelings, whereas the responses in a questionnaire must be taken at face value.

A semi-structured interview approach with open-finished questions was used. While a qualitative interview can take many forms, from highly structured to unstructured, most researchers use an interview guide, as I did, to ensure key topics are explored with all the participants (Kvale, 1996; Hennink, 2014). The input of the tutors was not confined to the set of questions but took an informant rather than respondent approach (Powney and Watts, 1987), in which there was potential for revealing issues and questions I had not known to ask. The academic tutors were my peers at the university; this conversation between equals, rather than a formal question-and-answer exchange, valued their knowledge and experience and allowed them to contribute to the agenda. The interviews used questions such as 'Tell me about ...' or 'Can we talk a bit about ...', which opened a topic without specifying a particular aspect or line of inquiry. This enabled me to acquire insight into the perceptions of each tutor, expanding the interview beyond collecting facts and allowing the participant an authentic voice. The same schedule was used for the interviews as for the focus groups (See Appendix 15).

Carey (2012) advises that interviews are recommended for potentially complex data and are an ideal platform to scrutinise privileged information, especially if we gain access to 'key players' such as the tutors at Anglia Ruskin, who were amongst the first academics to use the eOAR. Carey continues by highlighting the potential of interviews to acquire new insights on issues previously under-explored. Qualitative interviews can, though, be problematic; as Nunkoosing (2005, p.701) points out,

> "The interviewer does not just collect data, as if picking daisies; he or she colludes with the interviewee to create, to construct, stories. In this

context, all the stories are authentic rather than true."

People frequently do not disclose everything about themselves in research interviews; neither should they be expected to do so (Charmaz, 1995). Academics could have chosen to tell me only aspects of their experience using the eOAR that they wished to divulge or were most interested in telling. It was my impression that the academics in this research spoke freely.

Another issue with interviews includes gaining access to enough suitable participants. As an academic working within the faculty in which the research was undertaken, access was not complicated to negotiate, as the research was seen as valuable by both the Dean of the Faculty and the Head of the School of Nursing. Even when access is acquired, participants may not attend or arrive late. Finding sufficient academic to participate was not straightforward. On several occasions, academics cancelled interviews due to work commitments. Face-to-face interviews can be expensive in terms of time and travel costs; this was not an issue in this research as the academics worked for the same university as I did, so I could interview them during the working day. Transcription can be laborious, and the analysis can be complicated. One of my key concerns was that people outside the study would be able to identify the academics who took part. For this reason, minimal participant information for the academics is provided in table five below. Tutors in the remainder of this thesis are coded as T1 through to T6.

Tutor	Specialism	Date of interview	Gender
Tutor1	Mental Health	28/04/2018	Female
Tutor 2	Adult	24/04/2018	Male
Tutor 3	Adult	07/05/2018	Female
Tutor 4	Adult	07/05/2018	Female
Tutor 5	Adult	13/08/2018	Male
Tutor 6	Child	13/08/2018	Female

Table 5 Academic participants

Minor amendments were made to the interview schedule following the first interview to ensure that the responses were relevant to the research questions. The consistency in the responses across subsequent interviews indicated the questions were relevant; this was further substantiated in the integration process between the qualitative and quantitative findings during data analysis. The interviews became a conversation between peers. On reflection, I suspect those colleagues who were uncomfortable with discussing the eOAR with me had not agreed to participate. All the interviews were audio-recorded and transcribed verbatim.

Transcripts were returned to the respondents for validation before analysis several weeks after the semi-structured interview; Miles, Huberman and Saldaña (2020) describe this as member checking or validation. Trustworthiness of results is the root of quality in qualitative research. Member checking is a technique for exploring the credibility of results (Birt, et al., 2016). It involves allowing research participants to engage with interview data, potentially enhancing the accuracy of the data. There are though challenges with the member checking. Forbat and Henderson (2005), in a critical reflection on their experiences of sharing transcripts with participants, raise ethical questions about member checking, its value and its impact on participants. They discuss the potential for an emotional response from participant is a patient who has moved on with their health journey, either positively or negatively. Buchbinder (2011), in their study of researcher experiences of validation interviews, identified a dilemma for researchers undertaking member checking in deciding the boundaries when granting legitimacy to participant interpretations.

The participants here were academics, four with doctorates and the focus of the interview was not sensitive, so there was little risk of harm. Therefore, member checking was considered appropriate as peer respect, treating the academics as active subjects and mutual collaborators.

From a constructivist epistemology, member checking offered the academics an opportunity to reconstruct their narrative by deleting extracts they no longer believed represented their experience or may have felt negatively represented them. Alternatively, from a positivistic/realist stance, such checks might be tied with ideas of truth or the validity of the data.

Three of the six academics returned the transcripts with annotations. No data was added, removed, or substantially changed in all three transcripts. The annotations were all related to

correcting grammar or syntax in speech within the verbatim written text. For academics, correct composition within the script appeared to be necessary for positively representing them. Forbat and Henderson (2005) report similar experiences with participants disliking how their speech appears in the text. As none of the corrections changed the interpretation of the data within the analysis, the value of member checking within this research could be questioned. However, it confirmed that the academics had nothing more to add, that the transcripts accurately reflected what they wanted to express and ensured the academics felt positively represented.

3.8.3 Mentor survey

As a data collection format for academic research, questionnaires owe their origin to the quantitative researcher Francis Galton (Remenyi, 2011). They are frequently viewed as a means of collecting quantitative data for statistical interpretation. Occasionally, they are used to collect qualitative data.

The questionnaire in this study consisted mainly of short, structured questions answered by a quick tick box response indicating the mentor's understanding or preference. There were also open-ended qualitative questions that required more extensive typed responses. Remenyi (2011) suggests that open questions reach beyond the usual confines of quantitative research and so can offer a bridge between the paradigms. However, he cautions that there is an inherent ambiguity between the opportunity a questionnaire offers for informants to respond quickly and efficiently and the amount of time to answer open-ended questions.

The questionnaire was an appropriate method for answering the research questions because the survey instrument was developed based on the analysis of the student focus groups, tutor interviews and documentary analysis, including the MyProgress helpdesk tickets completed by mentors and students. At this point, there was sufficient information to formulate pre-determined questions that could be articulated by selecting different groups or categories of opinions or experiences. It could be argued that the questions formulated based on the experiences of students and tutors would be invalid for mentors.

However, a review of the MyProgress help desk tickets (Anglia Ruskin University, 2017) submitted by mentors suggested that many of the issues and experiences of mentors

mirrored those of the students and tutors that had already been revealed in the qualitative analysis. The purpose of the survey was to determine how closely the mentor experience paralleled that of the students and where it diverged from or contradicted that of the students or academics. The MyProgress helpdesk includes access to individual support via a weblink during office hours, it also provides automated answers 24 hours a day to frequently asked questions and tracks how many times specific questions are raised by mentors, students, and academics. As new questions were raised, I updated the automated answers to respond to them. When an automated response was generated the digital helpdesk counted how many times specific questions were raised. In this way it was possibly to identify issues encountered by mentors in using the eOAR, compare these to the responses from the student and academic qualitative data and reflect on how this information should influence the questions in the survey tool.

During the two years of the study, the students were placed in a vast array of placement areas, including but not limited to medical and surgical wards, operating theatre departments, intensive care units, accident and emergency departments, GP surgeries, district nurses and community mental health worker teams. I was eager to capture the insights of mentors from as many placement areas as possible. However, because of the number of placements, it was impossible to capture this through focus groups or individual interviews. Accessing mentors during the workday can be problematic because patients are their priority. Personal experience from previous research has demonstrated that 1:1 interviews with qualified nurses are frequently cancelled and that it is difficult to find a time when mentors can leave clinical areas to participate in a focus group resulting in low participation rates.

No pre-existing validated questionnaire captured the necessary information. Therefore, it was necessary to develop a custom tool. Online survey by JISC was selected as the platform to host the survey; 130 UK universities use it. JISC takes its responsibilities regarding data protection seriously. Details of JISC's GDPR approach can be found on their website <u>www.jisc.ac.UK/GDP.</u> The survey was estimated to take between 15 and 20 minutes to finish.

The survey responses were connected to a limited set of optional demographic information to monitor and mitigate response bias or to facilitate analysis based on these factors, e.g., gender and age. Because we want to ensure that MyProgress is accessible for all mentors, we also asked if they had any additional learning. Mentors were instructed to select the 'prefer not to respond' option if they did not wish to respond to the demographic or disability questions. After completing the survey, the mentor could print a copy of their responses and they were issued with a survey number. This number identified the unique response in the survey database. The researchers could not identify who was associated with this number unless the respondent provided their unique number. The survey did not collect any personally identifiable information, such as mentor names or email addresses, so it was anonymous. Mentors could, however, be identified if they provided identifying responses to discussion questions.

The tool was pre-tested on six mentors in clinical practice to ensure that it was valid and minor modifications to a couple of questions to improve clarity were made in response. Each of the five Practice Education Managers had the opportunity to review and provide feedback on the questionnaire prior to distribution. Two of the Practice Education Managers provided helpful feedback and comments, which resulted in minor modifications to the instrument. The final instrument was separated into sections with clear subject headings. In addition, demographic information, such as gender and ethnicity of mentors was collected, but participants were not required to provide this data. The survey instrument is in Appendix 18. Table six below maps the research questions to the survey tool. Some survey items were relevant to two or more research questions.

Research question	Survey item
 What is considered legitimate practice in completing the student nurse paper version of practice assessment documents (PAD)? 	20,22, 29
2. Was there divergence from legitimacy identified by the personal tutors and, if so, what was the nature of this divergence?	Not applicable
3. Why is electronic practice assessment difficult to introduce in the learning landscape/community of practice?	7,8,9,10,11,12,14,15,16, 26, 27, 30, 31, 34, 36, 37, 38, 41

Research c	question	Survey item
4. Wha perc men mad	at aspects of electronic practice assessment are eived as legitimate by academics, students and tors? How can electronic practice assessment be le legitimate?	13,14,15,16,17,18,19,21,24, 29, 32, 33, 34, 35, 36, 38, 40, 41
5. Wha achi prac	at, if any, benefits can an electronic on-going evement record offer the community of nursing tice?	19, 21,23,24,25, 27, 28, 29, 33, 35, 39, 41

Table 6 Survey items mapped to research questions

It can be costly to mail questionnaires and the response rate is frequently low. By using the Online Survey tool (JISC, 2019), distribution costs were kept to an absolute minimum; this platform is hosted by JISC and is used by 130 UK universities it fully complies with UK data protection laws, GDPR (Council Regulation (EU) 2016/679, 2016) and accessibility requirements.

It can be difficult to convince respondents to complete questionnaires. ARU has a close relationship with our placement areas. In each of our large healthcare trusts, we meet regularly with placement education managers employed by the trust to support the clinical practice of student nurses. The placement education managers granted mentor access, who were eager to evaluate the eOAR from their perspective. The link to the survey was emailed by the practice education manager in their placement organisation. A hyperlink in the email provided access to the questionnaire. Receiving an email from within the mentor's organisation resolved some problems associated with unsolicited emails reaching mentors, which may be perceived as spam, or the email being blocked by the placement computer's firewall.

A survey question was used to determine whether the mentor should be included in the bounded case study. The survey was then self-administered. All but two of the 62 responses came from the two largest of our placement providers. One was a large University Hospital Trust while the other was a local NHS Community Trust. I was unable to obtain responses from the other placement providers despite repeated reminders. It is unknown whether the mentors did not respond or whether gatekeepers within the trusts did not forward the email

to mentors. However, the responses received reflected a wide variety of placements within an Acute hospital and Community placements and were distributed in nearly equal proportions.

The participant information was included in the link prior to the beginning of the questionnaire. The completion of the survey was interpreted as consent to participate in the study. There was motivation for the mentors to complete the survey. They were aware that ARU would use the information they provided to develop and improve the eOAR based on the survey's findings. It was hoped this would assure mentors that their contributions would be valuable.

Upon retrieving the data, I discovered that one mentor had completed the questionnaire despite never having used the eOAR. It was clear from the introductory email and from the survey itself that only mentors who had used MyProgress should complete the questionnaire. The mentor stated in response to one of the open-ended questions they were unable to respond to most questions because they had never used the eOAR. The mentor stated that they had merely selected responses that they deemed appropriate if they had used it. The data from this response was removed before data analysis. Data completeness is one advantage of using a digital survey over paper documentation. The survey was designed so that the mentor could not proceed if they omitted a response to a key question.

Sixty-two mentors participated in the survey; 29 worked in the community, while 33 worked in hospitals. Table seven below summarises details of the mentors who participated in the research. Table eight compares the demographics (age, experience, ethnicity, additional learning needs and gender) of community-based mentors and hospital-based mentors. The demographic data between the two groups is similar although there was a slightly higher proportion of Asian mentors in the hospitals.

Category	Category data	Number of mentors
Age	20-30	5
	31-40	20
	41-50	25
	51-60	9
	>60	3
Work Area	Community	29
	Hospital	33

Category	Category data	Number of mentors
Gender	Male	50 12
Ethnicity	Asian/Asian British Black/African/Caribbean	6 6
	Mixed/Multiple ethnic group White Other Prefer not to say	1 45 2 2
Years as a mentor	 < 1 year 1-2 years 3-5 years >6 years >10 years 	6 10 16 10 20

Table 7 Mentor demographic data

		Comparison between demographic data of community and hospital- based mentors		
		Placement Area Community or Hospital based		
		Community n=29	Hospital N=33	Total
How old are	20 - 30	1	4	
you?	31 - 40	9	12	21
	41 - 50	11	12	23
	51 - 60	5	5	10
	Older than 60	3	0	3
How long have	less than a year	1	4	5
you been a mentor for	1 year up to 2 years	4	7	11
student nurses?	3 years up to 5 years	8	9	17
	Greater than 6 years	3	6	9
	Greater than 10 years	13	7	20
	White	22	25	47

		Comparison between demographic data of community and hospital- based mentors		
		Placement Ar Community o based	rea r Hospital	
		Community n=29	Hospital N=33	Total
	Mixed/Multiple ethnic groups	1	0	1
What is your	Asian/Asian British	1	5	6
Choose one option that best	Black/African/Caribbean/Black British	3	2	5
describes your	Other Ethnic Group	1	1	2
background	Prefer not to answer	1	0	1
Do you have any learning needs or physical limitations which make it difficult for you to use electronic tablets?	No	29	33	62
What gender	Male	5	7	12
are you?	Female	24	26	50
Are you a sign	Yes	11	17	28
completed sign	No	18	16	34
off documentation?				

Table 8 Comparison of demographic data community and hospital-based mentors

3.8.4 MyProgress data analytics

Progress and report data stored in MyProgress were used to identify if students completed their formative and summative assessments on time. In the MyProgress administration account, an 'organisation completions summary' report was generated (see figure 8 below) to determine the date students submitted their assessments. After accessing this report type, to get the pertinent data, the cohort group within the case study was selected along with the period the students were allocated to the placement (response from and to dates), and their assessments were grouped by submission date (see figure 9). Clicking on 'view report' generated an excel spreadsheet. This report contained a list of the assessments submitted by each student in the case study and the dates they were all submitted. The dates of assessment completion were digital date stamps generated by the MyProgress app when each assessment was submitted.

To identify how numerous assessments were not completed, an organisation noncompletion report was generated. Selecting this option enabled the generation of a report as an excel spreadsheet, listing all non-submitted assessments for each student. The spreadsheets were stored on the researcher's password-protected university laptop. All the data was anonymised before storage by removing the students' names and replacing them with a unique identifying number.

A Case Study Exploration of the Adoption of an Electronic Ongoing Achievement Record

Ť	Nursing Admin edit profile
	Progress & reports
	S Assessment S Deployed S Practice assessment
a.r.u .	Assessment completed assessment reports
倄 Home	Interereptorts provide a range or views or assessment completed assessments and their contents.
III Progress & reports	Auditing & marking audit report
🖋 Admin	This report allows you to report on the history of marked completed assessments.
. Organisation	Organisation completed assessment comparison report
🚨 Manage users	This report lets you compare a number of different completed assessments in your organisation, to a chosen assessment side by side - especially useful when comparing completed assessments to email invite assessments
曫 Manage groups	assistment and by and a capecially asered when comparing completed assistments to email invite assistments.
Manage frameworks	Image: Second Se
Manage dashboards	This summary report provides a breakdown of assessment completions across the organisation.
K Messages and Emails	Organisation detailed completed assessment report
Assessment settings	This detailed report provides a full breakdown of assessment completed assessments in your organisation,
🛞 Integrations	including all user-submitted answers, scores, grades and comments.
Terminology	Organisation email verified assessment score report
Branding	This report collects all the scores for multiple-choice-questions in email verified completed assessments in your
Op Analytics	organisation, and groups them by user, allowing you to see an average per question, and an average overall.
	Organisation marker report
	This report shows which assessment completed assessments across the organisation require marking and which have been marked.
	O Organisation non-completions report
	This report highlights users who do not have a response to all deployments of a selected assessment within a selected timeframe.

Figure 8 completions and non-completions summary report MyProgress

a.r.u. Anglia Ruskin University				<u>Myprogress</u> * is htt	© MyKnowledgeMap Ltd p://www.myknowledge	v7.3.3 2010-2022 emap.com/
Response From Date			Response To Date			View Report
Include Withdrawn Assessments	◯ True ◯ False		Criteria	<select a="" value=""></select>		
Assessment		\sim	Group by	No Grouping V		

Figure 9 Organisation completion summary data report extraction screen capture

3.8.5 Summary of data collection



Figure 10 What's in the case? Summary of the case study design

A mixed-methods exploratory sequential strategy was used. Integration in the study's conceptualisation occurred through the exploratory sequential design (see figure 11). The qualitative student focus groups and tutor one-to-one semi-structured interviews were collected and analysed first. The themes identified in the qualitative data were then used to construct the survey instrument. External factors drove the sequential design, the extended time taken to gain access to the mentors (NHS employees) and the need to conduct the focus groups before the students graduated. Therefore, the student data was collected first and then there was a delay before the survey could be distributed. There were three data collection strands and four data collection methods employed. Teddlie and Tashakkori (2009) describe a strand as an element of a mixed-methods study that comprises the fundamental process of undertaking quantitative or qualitative research: posing a question, collecting and analysing data, and interpreting results. This design expands the breadth and depth of the study.

Disadvantages of the sequential design

Four sets of data collected in three stages meant that data collection took longer to complete than a parallel design. As a result, data collection took 18 months in total. This required more time and resources and resulted in an extensive complex data set.

Alignment of eOAR to user needs

I registered for the PhD programme simultaneously as the students undertook their first placement using the eOAR. The need to undertake an initial literature review, decide on the research questions, methodology and methods and gain ethical approval meant that the focus groups were conducted when the students were in their third year and fourth placement using the eOAR. All the student, academic and mentor data was collected 18 months to two years after introducing the eOAR. Between each successive placement, there was continual development of both the digital functioning of the MyProgress app and the layout of the eOAR in response to feedback I had received from users during training sessions and in the process of providing helpdesk support. This meant that each time the students commenced a new placement, they had an updated version of the MyProgress app and eOAR; therefore, all the students and academics had worked with four different versions. Because the students were allocated a new mentor every time they moved

placement area, the mentors may have just worked with a single version of the eOAR or up to four.

Chapter 4: Data Analysis

4.1 Introduction to chapter

In this chapter, the data analysis procedures are examined. The chapter commences with the processes involved in the qualitative analysis of the student focus groups and tutor interviews. The latter half of the chapter outlines the methods employed in the analysis of the mentor survey and data analytics from MyProgress.

4.2 Analysis of student focus groups and tutor interviews

4.2.1 Introduction to thematic analysis

The focus group and interview data were explored using thematic analysis (TA). Terry and Hayfield (2021) define TA as a 'flexible analytical method that enables the researcher to construct themes - meaning-based patterns - to report their interpretation of a qualitative data set." (2021, p.3). They advise that researchers using any theoretical framework can use TA and outline a six-step process first advocated by Braun and Clarke (2006).

- 1. Familiarisation with the data
- 2. Open-ended coding
- 3. Initial theme generation
- 4. Developing and reviewing themes
- 5. Defining and naming final themes
- 6. Writing up the report

Braun and Clarke (2006) highlight the centrality of reflexivity or the researcher's interpretation of the data. They present the six-stage approach as an explicitly relativist framework they characterise as 'reflexive thematic analyses. Reflexive TA is a form of thematic analysis which embraces researcher subjectivity and is undertaken through rigorous engagement with the data, guided by the research questions and theoretical orientations. Fundamental to reflexive TA is the fact that it is a method, not a methodology (Braun and Clarke, 2022). Terry, et al. (2017), Terry and Hayfield (2021) and Braun and Clarke (2022) provide direction on how to apply the principles and practice of reflexive TA

while emphasising that there are no rules for the process and that researchers should not adhere rigidly to the framework they provide.

This section describes the methodical, systematic process of reflexive thematic analysis of the raw data utilised in this thesis. It was one in which the participants and the researcher co-constructed the emergent themes through their interpretation of the data. As defined by Braun and Clarke (2022, p. 57), the process included the exploration of meaning at both the semantic level ('explicitly expressed meaning which often stays close to the words of the participants') and latent level ('focus on deeper, more implicit or conceptual level meaning'). The analysis procedures loosely adhered to the six-step process outlined above, although stages two and three were combined.

4.2.2 Step 1: Familiarisation with the data

Immediately following the interviews and focus groups, I jotted down thoughts, ideas and concepts that arose. I expanded these notes as soon as possible after the contact, usually the same evening. This comprised a contact summary sheet as described by Miles, Huberman and Saldaña (2020, p.122) and included key contact details, the main issues and themes highlighted, and a summary of the information acquired (or not acquired). I also noted anything that struck me as pertinent, relevant or illuminating, as well as what new or existing questions I needed to consider in my next contact. I reflected on the contact summaries and adapted subsequent interviews and focus groups, considering what had emerged. In addition, I kept a research journal to record and reflect on any data-related observations.

The audio recordings of the focus groups and interview were transcribed verbatim. Many qualitative researchers (Sliverman, 2017; Silverman, 2022; Braun and Clarke, 2022; Terry and Hayfield, 2021) advise that the researcher undertake this to become familiar with the data. Working full time while undertaking a PhD, I needed an efficient way to expedite the process. The cost of transcription services was high. For this reason, I opted to use an artificial intelligence package (Trint) that uses speech recognition to automatically and rapidly (in less than 10 minutes for an hour recording for £10) converts speech to text. The transcription was not perfect, but it produced a first-draft, time-coded transcript that was easy to edit. The audio can be played alongside the transcript in the software, and corrections can be made. This was effective for most of the interviews. It balanced the need

for efficiency and familiarity with the data, which was achieved through editing the initial draft. The greater the clarity of the recording, the more accurate the transcription. Using a high-quality audio recorder resulted in approximately 90% accuracy. Trint did not work for the focus groups because of its inability to distinguish between different participants and the presence of excessive background noise and crosstalk. It was also incapable of handling the recording of one tutor with a particularly strong accent. The researcher manually transcribed this interview and the focus groups.

4.2.3 Qualitative data analysis with Atlas.Ti

Computer-assisted qualitative data analysis software (CAQDAS) provides an efficient way to store and retrieve the corpus of research data and assist in the analysis. However, the analysis is not automated, and the coding process remains a process of reflection and discovery (Miles, Huberman and Saldaña, 2020). Atlas.Ti (version 8.4.0 for Mac) software was used to assist with textual analysis, which I found intuitive. Atlas.Ti facilitates the coding process by assisting the researcher in linking the codes through the creation of code 'families' and tracking emerging concepts through memoing.

4.2.4 Steps 2 and 3 open-ended coding, initial theme generation

The audio recordings of the focus groups and one-to-one interviews were transcribed verbatim and uploaded into Atlas. Ti after verification. The initial coding was inductive and undertaken in vivo on the transcript (see figure 11 below). This first step aimed to develop a code list that described the themes in the data, naming them and attempting to make sense of their similarities and differences. A common approach to coding is line-by-line analysis; Holstein (1995) describes an alternative approach to interview data, viewing it as stories or narratives in which people describe their world. Instead of coding each line individually, the text was coded to identify participants' narratives. This opens the analysis to an approach in which the interviewer and interviewee co-create a plausible account of the world and are equal partners. This method was chosen as it aligns with constructivist and case study requirements to hold the contextual nature of the accounts at the fore. The students and tutors told their stories of how they experienced the introduction of the eOAR. As I read and reread the transcripts, I sometimes identified similar stories emerging from students and tutors as well as perspectives or priorities that differed. I compared the emerging account to my narrative leading the introduction of the eOAR and the engagement I had with the users.

The code was a descriptive label for a data segment which formed part of the overall narrative; this generated a structured code list. As the code list expanded from the initial transcripts, it was applied to the remaining data. An example of in-text coding can be seen below in figure 11. 156 open codes were identified in the initial coding for students and mentors. The number of times the code was recorded in the transcripts was documented in a table (see Appendix 19a).



Figure 11 Stage one in vivo open coding

4.2.5 Step 4: Developing and reviewing themes: Creating code families

Miles, Huberman and Saldaña (2020, p.79) refer to this stage of analysis as 'pattern coding', describing it as a process that aims to condense a large amount of data into smaller analytic units. During this stage, the codes were organised into code families. Each family represented an emerging conceptual category. It was a method of making sense of the data. This was done using the code manager within Atlas.Ti. First, prefixes were added to the

initial code, allocating a family name, e.g., 'Challenges in using MyProgress.' This has the benefit that it was possible to then sort the data alphabetically into family code groups. At this point, some initial codes were merged due to code overlap and redundant codes were removed. The family groups were subsequently assigned a colour that visually represented their relationship. Figure 12 below depicts the code manager in Atlas.Ti, during the initial coding process.

The colour codes for each family tracked the data throughout the analysis. The full details of the colour code families can be found in Appendix 19b.

4.2.6 Step 5: Linking code families to the research questions using coding nets

Atlas.Ti includes a network function tool for visually exploring data. This tool was used to understand better the data landscape during coding. Nets were constructed around the research questions. The networks helped visualise relationships between the data. Khateb, et al. (2002) suggest that images activate brain areas different from words, improving metacognition and encouraging creative thinking.

The product of step five was a table containing the initial codes grouped into families that emerged in step 4 and linked to the research questions (see Appendix 19b).

A Case Study Exploration of the Adoption of an Electronic Ongoing Achievement Record

+ Q Search Code	A Z+		٢	Name	^	•••		\diamond	Groups	$\langle \! \circ \! \rangle$	Comment	Creator	Cr
🔆 Q1a_Legitimacy	15 <	Q	٠	Accessibility/Enhanced learning needs	s	 1	2 🗲	1	Q4a_Governanc	1	This code relates to the experience of users with addit	Sian Shaw	2
🔅 Q1b_Specific Asses	19 <	\diamond	٠	Additional skills students learnt from S	S		5 —	0	Q5c_Employabili	1		Sian Shaw	2
🔅 Q1c_Specific comm	15 <	>	٠	Additional skills students learnt from S	S			0	Q5c_Employabili	1		Sian Shaw	1
Q2a_Challenges in	35	\diamond	٠	Additional skills students learnt from 5	S		5 —	0	Q5c_Employabili	1		Sian Shaw	2
Q2b_Navigation	11	2	•	Additional skills students learnt from S	s		1 —	0	Q5c_Employabili	1		Sian Shaw	2
Q3a_Education and s	·· 7 🗸	5	٠	Additional skills students learnt from S	S		5 —	0	Q5c_Employabili	1		Sian Shaw	2
Q3b_Advantages of	17	5	•	Additional uses for tablets - Education	na		3 —	0	Q5a_Additional	1		Sian Shaw	2
Q4a_Governance m	6	Ś	•	Additional uses for tablets - Finding E	vi		1 —	0	Q5a_Additional	1		Sian Shaw	2
O5a Additional uses	<	Ś	•	Additional uses for tablets - internet s	e		5 —	0	Q5a_Additional	1		Sian Shaw	2
© Q5b Communicating	4 <	Ś	•	Additional uses for tablets - making no	ot		1 _	0	Q5a_Additional	1		Sian Shaw	1
Q5c_Employability sk.	5 <	Ś	•	Advantages of myprogress -speliched	ck		2 —	0	Q3b_Advantage	1		Sian Shaw	2
🔆 Using myprogress i	28	Ś	•	Advantages of myprogress - envirome	en		1 _	0	Q3b_Advantage	1		Sian Shaw	2
13 Group(s)	à.	•	Advantages of myprogress - mentors	s		7 🕳	1	Q3b_Advantage	1	Digital practice assessment forces mentors to spend	Sian Shaw	2	
	<	5	•	Advantages of myprogress - portabilit	ty		1 —	0	Q3b_Advantage	1		Sian Shaw	2
00000000000000000	Ś	•	Advantages of myprogress - quicker t	0		3 —	0	Q3b_Advantage	1		Sian Shaw	2	
	Ś	•	Advantages of myprogress - revalidati	ion		2 💳	1	Q3b_Advantage	1		Sian Shaw	2	
	Ś	•	Advantages of myprogress -reflection	s		2 🕳	1	Q3b_Advantage	1		Sian Shaw	2	
	à	•	Advantages of myprogress- flexible ch	h		6 —	1	Q3b_Advantage	1	The code relates to the different choices of platform u	Sian Shaw	2	
	2	•	Advantages of myprogress-ablity to re	e		2 💼	2	Q3b_Advantage	1	Studnets sometimes worrying too much about comme	Sian Shaw	2	
	ò.	•	Advantages of paper PAD - ability to f	II		7 💼	2		0	Students like the ability with paper documents to flick	Sian Shaw	2	
	2	٠	Advantages of paper PAD -knowledge	a		5 🕳	2	Q2a_Challenges	1	The academic is familiar with the paper practice asses	Sian Shaw	2	
	5	٠	Advantages of paper PAD -students fe	e		4 💶	2	Q2a_Challenges	1		Sian Shaw	2	
	Š	•	Advantatges of myprogress - Providing	g	·	4 🕳	2		0		Sian Shaw	2	
	à	•	Age - Impact of Age on learning to use	e			0		0	Academic belived that her lack of ablity to use myprog	Sian Shaw	2	
	5	•	Challenge in using myprocess - acces	s		1 🗲	1	Q2a_Challenges	1		Sian Shaw	2	
	Š.	•	Challenge in using myprogress - do no	ot		2 _	0	Q2a_Challenges	1	This code relates to the mentors not recognising that t	Sian Shaw	2	
	$\overline{\mathbf{D}}$	•	Challenge in using myprogress - pass	w		1 🗲	1	Q2a Challenges	1	This code relates to any issues with passwords to acc	Sian Shaw	2	
	5	•	Challenge in using myprogress - time	c	1			Q2a Challenges	1	,	Sian Shaw	2	
	š	•	Challenges in using myprogress - acc	e		2 _	0	Q2a Challenges	1	This code relates to tablets not being allowed in secur	Sian Shaw	2	
	~=												

Figure 12 Screen shot of code manager sorting into code families using Atlas.Ti

The rationale for using the networks is rooted in theories of learning from multiple representations, comprising generative learning theory (Wittrock, 1989), dual-coding theory (Paivio, 1990), and theories of multimedia learning (Mayer, 2005; Ainsworth, 2006; Schnotz, 2014). These theories propose that assimilating verbal and nonverbal information promotes the construction of a coherent mental representation. According to the constructionintegration model of text comprehension (Kintsch, 1988), readers create two primary levels of mental representations during reading: a text-based and a situation model. A text-based representation is created by selecting and organising ideas from the text into a network of propositions. In contrast, a situation model is constructed by actively integrating the text with existing knowledge. Reading the research transcripts and coding enables the researcher to recall the key concepts from the text. Creating a situation model using visual concept nets enables the researcher to draw inferences from the data by applying her knowledge and understanding to the model. Atlas. Ti enabled co-occurring codes within the initial coding to be automatically linked in the net. It was also possible to include links to quotes supporting data codes through hyperlinks back to the original text, thereby preserving the groundedness of the data.

This was a process I enjoyed. It was, however, cognitively demanding and time-consuming. Figure 14 below displays an example of a coding net in which the imagery of the landscape relating to legitimacy using the eOAR was explored. The purpose was not to create a network that could be used in a presentation or a report. Instead, it supported me in thinking about connections within the data and creating and naming relations. The colour coding of family groups was beneficial in this stage, as it was a clear visual reminder of data relationships. While creating nets, I was memoing my thoughts, ideas and interpretations within the Atlas.Ti memo section. Writing these memos was an integral part of this analytical phase. As I wrote, the connections between the data and the research questions became more transparent and the individual sections became linked to the overall story. Figure 13 includes some sample memos created during the formation of the nets.

> "One of the advantages of MyProgress appears to be that several mentors can access MyProgress at the same time. They can complete and read the assessments and all have access. This will be particularly useful with the new standards for education as mentors where there will be many more mentors and supervisors."

"The tutor is using the e-PAD of an able 'good' student as a benchmark against which to compare how many assessments other students have submitted."

"Is the fact that students can edit the documents linked to improved accessibility and the reason that students with additional learning needs find it so helpful?'

Figure 13 Example memos created during network analysis



Figure 14 Example of a net exploring the concept of legitimacy within the data

4.2.7 Table of counts

Counting codes in qualitative data is controversial. Some researchers believe counting diminishes the quality of research because it is inconsistent with some forms of qualitative inquiry (Fineman & Mangham, 1983; Gephart, 2004). Miles, Huberman and Saldaña (2020) note that while numbers are frequently disregarded, much counting occurs in the background and is hidden. Hannah and Lautsch (2011) argue that qualitative researchers should, sometimes, conceal their counting to avoid alienating particular academics and journal editors. I would argue that such behaviour is dishonest and calls into question the findings' veracity.

Morgan (1993) suggests that rather than arguing if counting codes are acceptable, the qualitative researcher should provide a rationale for their use. According to Miles, Huberman and Saldaña (2020, p137), "numeric frequency is not necessarily an indicator of qualitative significance but is a valid heuristic for exploring the possibility of hierarchical or proportional importance in the coded data." Miles, Huberman and Saldaña (2020) note that counting can ensure analytical integrity, detect bias, and assess the strength of insights. It was for these reasons that counting data was employed. Other qualitative experts concur that counting data is advantageous (Silverman, 2022; Silverman, 2017; Lee, 1998). To prevent the interpretive analysis from being overshadowed by what could be perceived as a positivist slant and to maintain the transparency of the analysis process, most of the tables of counts have been placed in the Appendices.

In this case study, a code frequency table was used to compare the magnitude of some codes and thus variables against others. The purpose of counting the initial codes was first to determine if some codes occurred more frequently in the data and if this was linked to any hierarchical importance, Illuminating the strength of association in the qualitative coding. This is data integration through transformation. It was also used as a means of pattern detection to determine if there were any differences in the data between academics and students and to aid interpretation of why these differences may occur.

After the third step, the initial codes were categorised into their respective family groups and the family groups linked to specific research questions. A table of counts was generated identifying the frequency of code families aligned to each research question using the code document table in Atlas.Ti (see figure 15). The data were divided into two groups, tutors and

students, to facilitate group-specific analysis. The code report was generated with linked quotations. A further clean-up of the data in which codes were removed, merged or re-coded when they did not appear correctly aligned was undertaken. The product of stage four is included in table nine below, which identifies the frequency of code families relating to a specific research question for each tutor and focus group.

Each initial code could be assigned multiple counts to single tutors or students. In the open coding process, a single count was generated each time a student or instructor mentioned a particular theme. Therefore, if tutors and students spoke about a topic that generated a specific code, deviated from the coded topic and returned to it later, it would generate two counts. In the student focus groups, if a student were assigned a code on the transcript, another student's contribution generated a second count of the same code; if the first student returned to the topic, it would generate three counts.

The tutors in table 9 are identified as T1 to T6, the student focus groups as SFG1 and SFG2 and the individual student interview as S4.
🔴 🕘 🕒 Code–Document Table								
Compress								
			[D] Students		Totals			
Q Search Codes Q Search Code Groups					Totalo			
Challenge in usi 2 🗹 🔅 Q1a_Legitimacy 15		<u> </u>	3 353	420				
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Challenge in us 10 V Challenge in us 10 V Challenge in us 10 V Challenge in us 15 Challenge in us 15	ific communities of practice	🔷 15 💿 67	22	43	65			
Challenges in usi 2 🗸 🛇 Q2a_Challenges 35	enges in using myprogress	🔷 35 👘 218	117	101	218			
\bigcirc Challenges in u 18 \checkmark \bigcirc Q2b_Navi	ation	♦ 11 (1) 79	52	27	79			
in u 15	ation and support		45	57	102			
in usi 2 V 🛇 Q4a_Governanc 17	ntages of myprogress		20	6	26			
into code in usi 1 Z 🛇 Q4b_Weakness o 6 🗠 Q4b_keak		↓ 17 · 96	39	57	96			
families in usi 2 V 🛇 Q5b_Communicat 4	rease of paper pad		5	10	24			
in usi 1 🗹 🔅 Q5c_Employabilit 5	chess of paper pao	↓ ↓ ↓ ↓	5	13	24			
□ ◇ Challenges in usi 0 □ ◇ Using myprogre 28 ◇ Q5a_Addi	tional uses for tablet	◇4 🖤 9	9		9			
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Challenges in u 14	oyability skills development	🔷 5 👘 13	12	1	13			
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All None All None								
C Transcripts C Search Document G	Sear	ch results: Tabl	e of counts, th	e frequency of				
🗌 📄 1 Transcript T 38 🗹 🗋 Students 3	open							
🗌 📄 2 Transcript 109 🗹 🗋 Tutors 6	open	open codes occurring in each research question						
C Regional Stransciript T 99 2 Group(s) Sorted by student and tutors.								
🗌 📄 4 Transcript T 53								
5 Transcript 173								
□ ≡ 6 Transcript 124 □ ≡ 7 Transcript 56								

Figure 15 Code document table in Atlas.Ti

Column1	T1	T2	Т3	T4	Т5	Т6	SFG1	SFG2	S4	Tutors total	Student total	Totals
Q1a_Legitimacy	6	11	1	5	15	10	12	15	18	48	45	93
Q1c_Specific communities of practice	12	3	7	13	0	8	11	10	1	43	22	65
Q2a_Challenges in using MyProgress	19	17	21	13	21	10	36	62	19	101	117	218
Q2b_Navigation	6	7	4	0	6	4	13	32	7	27	52	79
Q3a_Education and support	7	13	5	11	8	13	19	15	11	57	45	102
Q3b_Advantages of MyProgress	1	2	0	1	1	1	7	9	4	6	20	26
Q4a_Governance MyProgress	12	13	10	3	10	9	16	16	7	57	39	96
Q4b_Weakness of paper PAD	6	4	4	1	3	1	4	1	0	19	5	24
Q5a_Additional uses for tablet	0	0	0	0	0	0	6	3	0	0	9	9
Q5b_Communicating	4	2	0	3	0	0	2	3	0	9	5	14
Q5c_Employability skills development	0	0	0	0	0	1	7	0	5	1	12	13
Totals	73	72	52	50	64	57	133	166	72	368	371	739

Table 9 Number of time open codes recording within each interview or focus group related to the research question

4.2.8 Summary of analysis of focus groups and 1:1 interviews

The qualitative data analysis was inductive and grounded in the data. So that the reader can assess the dependability and confirmability of the research, an audit trail has been provided detailing the methods and decisions made throughout the analysis. Figure 16 below summarises the process of analysing the data collected from the focus groups and interviews.



Figure 16 Summary of data analysis of focus groups and interviews

4.3 Analysis of the mentor survey

The questionnaires were analysed electronically via online survey (JISC, 2019). Collected data was initially viewed via the survey tool. Quantitative data was displayed as tables, bar or pie charts within the survey instrument and analysed. Text responses were accessed via a hyperlink within the survey. A report containing all the data was exported as a PDF. The online survey tool allowed the researcher to browse and exclude individual responses (for instance, mentors who had not supported students in the specific cohort within the bounded case) as well as filter by a specific answer or time parameter.

Data was also exported as an Excel spreadsheet. For further analysis. The quantitative data was uploaded into the software Statistical Package for the Social Sciences (SPSS for MAC v.9.6.0.0) (IBM Corporation 2017). After the data was uploaded, it was coded based on its classification type: interval, ordinal or nominal variables. The 62 mentors included in this case study answered all the survey questions; therefore, there was no missing data to code.

The SPSS package was used to generate contingency tables illustrating the relationship between the work location of the mentor (community or hospital) and their responses to various questions. Contingency tables are a versatile method for analysing the relationships between two variables (Bryman, 2016). The data was analysed using the crosstabs dialogue box by selecting mentor work location as the independent variable and then selecting the dependent variable of interest. This data is presented within the thesis as contingency tables (including the number of mentors and percentages for more straightforward interpretation), such as tables, or as stacked columns, graphs.. Graphs were created using Microsoft Excel (MAC v. 16.54 (Microsoft Corporation, 2021).

The analysis of the survey was initially deductive. The survey was designed following the analysis of the student and tutor data. Consequently, it was designed to assess the extent to which issues identified by mentors compared to those that emerged from the student and tutor data.

4.4 Analysis of data analytics from MyProgress

Identifying the number of students who submitted their formative or summative assessment late and how late was determined by tallying the number of students who submitted each of the selected assessment types during each week of placement. The Excel spreadsheets extracted from MyProgress were first sorted by assessment name and then the week of submission for each assessment. Each period of placement allocation had an individual spreadsheet. Excel's 'COUNTIF' function was used to determine the frequency of occurrence for each assessment type for each week. A comparable process was used to determine the number of non-submissions.

4.5 Integration of data during analysis

The data integration was accomplished through complementarity (Creswell and Plano Clark, 2017). This process involved elucidating where different groups of users within the community of practice intersected and diverged in their adoption of the eOAR. The Integration was embedded by linking the qualitative and quantitative data through the research's design, method, interpretation and reporting stages.

Data integration during analysis was achieved by merging the data by bringing together the information databases for comparison after individual analysis. The student focus groups and one-to-one academic interviews used similar interview schedules of semi-structured questions, allowing for a comparison of the responses. Also, because the analysis of the focus groups and interview data informed the development of the mentor survey, it was possible to compare the experiences of mentors, students and academics by merging responses to similar questions—this merging of data illuminated how the eOAR was adopted across the whole community of practice.

4:6 Chapter summary

The above chapter describes the approaches used in analysing the corpus of data and how philosophical consistency was achieved. A mixed-methods case design added complexity to the research process. Using several data collection methods (survey, focus groups, interviews, and data analytics). I would argue that using mixed data and multiple research

methods mitigates some downsides of adopting a single case study design. Using this approach, care was taken to ensure philosophical consistency throughout the entire research; evidence that this was the case is provided through detailed descriptions of the research process.

Chapter 5 Results:Regulatory legitimacy of the paper practice assessment document (PAD)

5.1 Presentation of the results

The results chapters centre on the research questions (see 2.4.3). For specific research questions, the data emerges more strongly from one or more source(s) of data collection, methods or participant groups. The structure of the narrative presentation of the findings facilitated the integration of data at the levels of interpretation and reporting. Adopting a complementary approach (see 3.5.2) (Creswell and Plano Clark, 2017), the voices of the students, tutors and mentors were combined to illustrate these distinct groups' divergent perspectives, views and interpretations.

5.1.1 Integration of findings

The findings from all qualitative and quantitative data collection methods are woven together and presented theme-by-theme. Instead of presenting the results of each method of data collection individually and separating the experiences of tutors, students and mentors into distinct chapters, the results from chapters five through to nine are constructed around the research questions and intertwine the experiences of all users. This required mapping the analysed data from students, mentors and academics to each research question. This process occurred as an integrated component of writing the narrative in the results chapters; therefore, writing up the findings was also a component of the ongoing analysis and interpretation.

- Key to codes used in results chapters
- T= tutor
- SFG = student focus group
- S= Student
- M= Mentor
- R= Researcher

5.2 Introduction to chapter:

This chapter focuses on the first two research questions.

- 1. What was considered legitimate practice in completing the student nurse paper version of practice assessment documents (PAD)?
- 2. Was there divergence from legitimacy identified and if so, what was the nature of this divergence?

This chapter focuses on regulatory legitimacy, what is valid and legitimate according to the NMC (2010) Standards for Pre-Registration Nursing Education (see 2.2.4).

5.2.1 Regulatory legitimacy of the PAD

The pre-registration nursing programme at ARU was developed in accordance with the Standards for Pre-Registration Nursing Education (NMC, 2010) and the Standards to Support Learning and Assessment in Practice (SLAiP) (NMC, 2008). To be legitimate, the practice assessment of student nurses needed to meet these regulatory requirements. Therefore, to understand the case, the reader must be familiar with these regulatory requirements outlined below.

In the latter half of the chapter, the research findings regarding instances in which the completion of the paper PAD deviates from the regulatory requirements or fails to map to and be used following these standards are presented.

5.3 Question 1a: Legitimate practice in completing the paper PAD: Curriculum design and regulatory framework

The students within this bounded case begun their course in Sept 2014 and completed it in August 2017. These students followed a curriculum based on The Standards for Pre-Registration Nursing Education (NMC, 2010). Therefore, this thesis's discussion is based on these standards, not on the current framework (NMC, 2018a). The Nursing and Midwifery Council standards to support learning and assess in practice [SLAiP] (NMC, 2008) required an appropriately prepared and qualified mentor to confirm the students' achievement of

competencies at the end of every placement. The student nurses must complete 2300 hours in clinical practice or 50% of the course.

Practice Assessment:

At the midpoint of each placement, a formative assessment was conducted to support the students' professional skills and knowledge development. It was a regulatory requirement (NMC, 2008) that all mentors documented and justified decisions made in assessing students. In addition, the mentor was required to provide regular feedback/feedforward and conduct formative assessments within a specified timeframe, allowing the students to improve and progress and ensure success at the summative assessment. Near the conclusion of the placement, the mentor completed the summative assessment to confirm that all established criteria were met.

Students were required by the NMC (2010) to demonstrate successful completion of

- 1. Performance criteria related to the five Essential Skills Clusters, which are aspects of nursing care (see figure 17 below for an example cluster skill medicine management)
 - Care, compassion and communication
 - Organisational aspects of care
 - Infection prevention and control
 - Nutrition and fluid management
 - Medicines management
- 2. An interpersonal and professional skills profile supporting the assessment of the ongoing achievement record (See figure 18 below)

The interprofessional skills profile assessed the students' attainment of the values underlying the NHS constitution (Department of Health, 2021) and 6Cs; care, compassion, communication, competence, courage and commitment (NHS England, 2012).

Module 8: Managing and monitoring quality in health care Cluster skill – Medicines management

This section must be completed by a 'live' registered mentor towards the end of the Part 1, who has worked with the student for no less than 4 weeks. Where appropriate, if a student has been unable to achieve the criteria due to a lack of opportunity, it is acceptable for them to demonstrate their level of knowledge through in-depth discussion.

Resp	1. ect and dignity	2. Compassion	3. Improving lives		4. Working together for	E	5. Everyone counts	Con	6. milment µality of
	The student is able to:				ummative ssessment Part1 irade (0-5) Please write grade a word and numbe	r	Mentor Name Signature	Date	
1	1 Under supervision, demonstrate safe and accurate calculation and administration of medicines within local and national policies. Ensure accurate record keeping in accordance with the nursing and midwifery council guidelines. Where available, this final year student should be supported in the participation of the administration of drugs on a minimum of 3 occasions per week. (NHS Values:5,6)				<u>g.</u> three (3))				
2	Demonstrate awareness of the most common drugs used in the practice area, their physiological effects, indications for use, the dosages, cautions and contraindications. Demonstrate knowledge of treating anaphylaxis and adverse reactions, recording and reporting as per local and national policies. (NHS Value: 6)								
3	Demonstrate ethical fram policies relate ordering, st withholding administrate drugs. (NHS Value	tes understanding reworks and assoc ating to the prescri lorage, administrat l, omission, covert ion, crushing and s c 6)	of legal and iated local ption, iion, safe storage of						
4	Demonstrat achieving of young pers medication (NHS Values	te and discuss the oncordance with to on and their family regimens. s:3,5,6)	concept of he child / / in relation to						
Please provide reasons for grades awarded. I confirm that consent from patients/service users has been consistently gained for this student									
Men	Mentor Signature								
				4	3				

Figure 17 Example cluster skill assessment, medicine management



SUMMATIVE ASSESSMENT OF THE INTERPERSONAL AND PROFESSIONAL SKILLS

(F) Indicates a fail (P) Indicates a pass.

STUDENT SID:

Hentors should choose one statement from each of the 6C's that best reflects the student's interpersonal and professional skills, irrespective of their stage of learning.

COMMUNICATION	Mantor	Mentor
	Please sign in ONE of the	Reasons / evidence for choosing
Please choose one statement below	bases below to indicate your choice of statement for this value	this statement
(F) 1. Fails to communicate key aspects of patient care to appropriate staff.		
(F) 2. Reacts adversely to constructive oriticism.		
(F) 3. Lacks <u>self awareness</u> and the effect of behaviours on others.		
(P) 4. Has a pleasant and approachable manner.		
(P) 5. Communicates effectively with patients and relatives.		
(P) 6. Uses interprofessional team working to support effective patient care.		
(P) 7. Encourages patients to participate in decisions around their care		
COURAGE	Mentor	Mentor
Please choose one statement below	Please sign in ORE of the boses below to indicate your choice of statement for this value	Reasons / evidence for choosing this statement
(F) 1. Demonstrates lack of interest regarding standards of patient care.		
(F) 2. Fails to respond to and report concerns of patients and carers.		
(F) 3. Poor advocate for patients / carers when opportunity arises.		
(P) 4. Accepts appropriate responsibility.		
(P) 5. Shares appropriate experience and knowledge to enhance patient care.		
(P) 6. Acts as an advocate for patients.		
(P) 7. Escalates concerns appropriately when the need arises.		
COMMITMENT	Mentor Please sign in ODE of the	Mentor Research (auidence for choseing
Please choose one statement below	bases below to indicate your choice of statement for this value	this statement
(F) 1. Displays a negative attitude.		
(F) 2. Behaves in an unprofessional manner.		
(F) 3. Lacks motivation.		
(P) 4. Actively seeks opportunities to develop own learning.		
(P) 5.Valued team member who has gained respect.		
(P) 6. Well motivated and adaptable.		
(P) 7.Consistently acts as a professional role model.		

Statements revised in collaboration with service users and mentors (Sept 2012) amended to reflect 6C's (March 2013) ©Anglia Ruskin University

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Figure 18 Example cluster skill assessment - communication, courage and commitment

Ongoing achievement record.

The NMC (2010) required that students maintain an ongoing record of achievement, which summarised learning that had occurred, identifying evidence to support the achievement of the NMC outcomes and competencies or areas where additional support and supervision were required. Mentors in the second and third years of the course needed to review the documents from the previous years to make judgements on the student's progress, identify their strengths and weaknesses and determine competencies to be attained. For the remainder of this thesis, the paper ongoing achievement record will be referred to as the 'PAD' and the electronic version as 'eOAR'. The only difference is that the former is paper-based and the latter digital.

Historically, the PAD at Anglia Ruskin University comprised three paper documents, one for each year of the course (each document containing 170 pages) and an additional sign-off document in the final year. At the beginning of each year, the students received a single document containing all the assessment documentation for the entire year. Additional documentation was completed if a student failed and was required to resubmit. Students were asked to photocopy the completed assessment pages from the PAD and submit the original document, with the photocopies, to their tutors on the summative submission date. Dates for summative submissions were published in the PAD. Mentors and students were instructed in the document to complete the formative assessment at the 'mid-point' of the placement.

Each of the three PADs was divided into two parts per year, with one formative and one summative assessment in each part. Each placement lasted approximately three months, with two placements per academic year. There were different versions of the PAD for each branch of nursing (child, adult and mental health). Mentors were required to complete the PAD parts corresponding to the dates the student was allocated to their area. Students would have two mentors per year of the course, more if a mentor became unavailable for any reason and needed to be replaced (e.g., due to ill health, move to a new job, pregnancy). The students participating in this research completed the first year of their practice assessment on paper and the second and third years digitally.

Student cohorts at the time of this case study were up to 500 per intake across its three campuses in Chelmsford, Cambridge and Peterborough. At the start of their course,

students were assigned to a tutor group of 24-30 students and remained in the same group for the three-year programme. Each tutor group was supported by an NMC registered academic who met the NMC teacher standard (NMC, 2008) and served as the students' first point of contact throughout the course.

5.4 Question 2: Illegitimate practice in using the PAD

Having identified previously the regulatory requirements of the NMC for practice assessment above, this section presents the findings regarding how far the use of the paper PAD deviated from legitimate regulatory practice. The initial section of this chapter focuses on some of the findings from the student focus groups and tutor interviews. It specifically addresses practices and concerns raised about the paper PAD where its use diverged from legitimate practice. At the heart of the concerns appears to be a lack of legitimacy within the community of practice of formative assessment by students and mentors. The issues raised are discussed here because they provide context for why an electronic solution was required and insight into how the experience of the paper PAD may have impacted readiness for change. Three illegitimate uses of the PAD by students were identified by the academic tutors.

- not bringing in the PAD for completion by mentors
- 'tatty books'
- losing the PAD

Three illegitimate practices identified by the tutors focused on how the mentors used the PAD:

- poor quality feedback
- grade inflation
- not completing the assessments on time.

One issue, incomplete assessments, had areas of concern in how the students and mentors used the PAD (figure 19).

One point to note is that, while tutors identified seven illegitimate practices, the students did not offer a similar insight into most of the issues tutors encountered with the paper documents. This lack of insight is noteworthy in terms of the student experience of adopting the eOAR. The students only identified one problem with the PAD and therefore, there was no real reason or motivation to change. The tutors identified issues with the PAD that meant the PAD risked not meeting NMC regulatory requirements and therefore saw more need to change.



Figure 19 Regulatory illegitimacy in using the PAD

5.4.1 Tatty PADs

The most frequently reported issue with the PADs by both tutors and the only issue identified by students was the deterioration in their condition over time. Four tutors (T1, T2, T3, T5) and three students (S1, S2, S5) raised this as a concern, with nine counts related to this code across all the transcripts.

S1 "Especially cos I'm someone who gets coffee stains on stuff all the time and it just made it easier....I suppose people don't take the book as

seriously as an electronic thing. I bet mentors take them home or get coffee spilt on them."

One tutor raised a concern about quality assurance and how external examiners would view the poor condition of some PADs.

T1 "Having spent the last nine years with the students bringing in tatty books that sometimes stunk, had lots of coffee stains, probably cigarette stains, all sorts of stains...The book is completely falling apart. It's dirty; it's tatty; you've got some students that just don't look after these books and if you were to give that to an external to review, you would really worry about how they would be able to do that."

In the survey, mentors also commented about the PADs becoming 'tatty.' A total of 31 or 50% of the mentors agreed or strongly agreed that the electronic version of the practice assessment document was less tatty than the paper version (figure 20).

M41146397 "It's less 'tatty', but it's dependent on the individual. If you look after the paper booklet, it should still be in good condition after many years."



Figure 20 Number of mentors who agreed/disagreed that MyProgress is 'less tatty' then the paper PAD

5.4.2 Students not bringing in their PADs for completion

Three of the tutors (T1, T3, and T5) raised concerns that some students historically did not take their PADs in to be completed or reviewed by their mentors. Also, one tutor (T2) raised concern that students had not brought in PADs for formative review sessions by personal tutors. Both mentors and tutors relied on the student to produce their PAD for completion as there was only one copy of the document, which the student owned; some students had not provided access. This sometimes had been a problem with the student not providing access to the PAD, for their mentor, so mentors were occasionally unable to complete the assessment.

T5 "The other thing for mentors as well is, with the books, I had a student who wouldn't take a book in...we had a situation where a student had just refused to take the book in. And, of course, they couldn't sign her off. But then she was saying, well, you didn't sign me off. But they [mentors] were saying, but you didn't bring the books in. She said oh yes, I did. But there was no evidence either way." The students were expected to provide access to their PADs from previous placements so that the mentors could assess their developmental needs and support the students by providing appropriate learning opportunities. Unfortunately, some students were not arranging this access. Students sometimes had withheld access from their mentor to previous practice documents, notably if they had failed. Withholding access to their record and essential information meant they might not receive appropriate support and guidance in future placements. T3 highlights the issue.

T3 "So this particular student, she went into practice, and her mentor didn't see the previous [assessment], as far as I'm aware. [The mentor] hadn't realised that she should be working on an action plan because she'd failed her previous placement. And therefore, the follow-up by that mentor was not perhaps as appropriate as it ought to have been in some respects."

One personal tutor reported difficulties acquiring access to the PAD for formative evaluation of her students.

T2 "Before, to get students to bring the book in was extremely difficult. If you said to the whole class, my class of 24 say, can you bring in your books when you are in next Thursday? Two thirds would bring them in."

These comments from tutors highlight that there seems to be a lack of understanding of the purpose of formative feedback in practice by students and of how it supports progression and student success.

5.4.3 Losing the PAD

Two tutors reported that sometimes, students lost all or part of the PAD (T3 and T5). Lost assessments became an issue when students were approaching the end of their final year and the regulator required their 'sign-off' mentor to check all the student's practice documentation from all their placements. If documentation were lost/missing, it would need to be recovered before students could be signed off by their mentors. For this reason,

personal tutors collected and stored photocopies of critical pages of their students' records at the end of each placement so that copies were available if the student had lost theirs.

T5 "There's negatives in the book. They're not perfect, are they [students] lose them."

5.4.4 Incomplete documentation

Five Tutors (T1, T2, T3, T5, T6) reported that PADs were often incomplete when submitted. Most of the incomplete documentation was related to formative assessments.

> T3 "...because sometimes there were things that were not completed. These tended to be things like service user [feedback] and interprofessional feedback, or things that didn't have an immediate impact. The things that always were completed tended to be the cluster skills and the summative [assessment].

One tutor hypothesised that this was because there were no consequences for not completing the formative assessment and that students needed to be persuaded of the validity of completing them.

T5 "Whereas before, on the PADs, I used to have gaps. ... it is difficult if something is deemed to be formative. Students don't necessarily see the importance of it because there is no formal pass or fail, there is no mark, there is no penalty if it's not done. And all I guess you can work on is the goodwill of the student and say this is about your learning. This is the way that we are trying to support you."

One student reported that she and her mentor were confused by the formative assessment, which could explain why the formative assessment was sometimes not completed.

S5 "It confused me so much having that, I thought 'I've not seen this before' and my mentor was then getting really confused as why it had cluster skills on [the formative assessment], she was getting very confused, she said 'Yeah, but we don't need to do that until the summative' I said 'No, this is the formative bit to say how I'm going to achieve them. We didn't end up doing them until the actual summative because she couldn't get her head around it."

The formative action plan was the part of the PAD reported most frequently to be incomplete by tutors. Unlike most of the documents the mentor completed, this section was a reflective account. After the formative assessment, it is completed by all students to address developmental needs related to the cluster skills. One reason students may not have completed the formative action plan is that some mentors in practice were advising students that the action plan does not need to be completed if they were a 'good' student.

T2 "Things like waiting to the very end to see if a formative action plan is done (laugh) and then getting the book and they haven't written an action plan and the students always say, but my mentor said, 'I was so good.' I said even if you're so good, there's always things you can move on and do."

For some students, the formative action plan appeared too similar to summaries of other assessments, which made the PAD unclear.

S4 "I also think I know this is a bigger problem with the assessment the way it's done but having clearer distinctions between the summaries of the interpersonal [skills profile], the cluster skills, and the formative action plan, I know that's caught so many people off, myself included."

Tutors were also confused about the completion of the action plan. One tutor incorrectly reported that action plans are only completed by a specific group of students perpetuating what appears to be a widely held misbelief.

T1 "The action plan, it's only for a few students really, those that are not proactive. Those that do not take responsibility for their learning."

This confusion was because there were two types of action plans in the PAD. The first one was to be completed by all students following the formative assessment. The second type was an action plan that was only to be completed by students for whom a cause for concern had been raised that the student was struggling with practice elements.

Another issue reported by tutors was that students were not emailing their personal tutor with details of their mentor. Receiving mentor details was essential. The personal tutor was required to check that the mentor was on a register held by Anglia Ruskin University that verified the mentor had completed an education programme and an update in the last three years. If a student did not have an appropriately qualified mentor, then the placement was not valid from the perspective of the NMC and may have needed to be repeated. Chasing mentor details resulted in additional work for tutors who needed to pursue the students to gain the information.

T6 "what is expected of students; they need to send the mentor details, for example. The mentor registration status and ideally, they need to send it within the first week. I keep reminding them, but I could say not all of them actually completed [forwarding these details] on time... sometimes it is quite challenging trying to remind students. "

5.4.5 Poor quality of mentor feedback

One tutor (T4) highlighted concerns raised in discussions with colleagues about the quality of assessment using the paper PAD and how much time the mentors really are spending alongside students discussing their progress.

T4 "We perhaps assume that they [students] are actually spending the time with their mentor and they are not. And they are not spending the time properly assessing the students. They're doing it through 'Oh, I think it's like this.' I've been speaking to some tutors who are doing their assessment documents and there are concerns about how the grading's done and how accurate some of the grading is because they aren't referring to the grading structures. So, what I think is, in practice, they don't sit down with the students."

Mentors were asked in the survey how long they spent completing student assessments on the PAD. The mentors reported that, on average, they spent 30 minutes (n=20) to four hours (n=28) completing the student paper PAD for a twelve-week placement. Six mentors reported taking less than 30 minutes and two over eight hours (figure 21).



Figure 21 Time taken by mentors to complete the student PAD in one placement

Figure 22 shows that the time mentors reported spending with the students completing the PAD jointly (as opposed to completing it alone and then meeting with the student) is similar to the total time taken. Twenty-eight or 45% of the mentors reported spending an hour or less during a 12-week placement completing the PAD together with the student. This is minimal time to discuss and assess formative progress and provide the summative assessment. None of the mentors reported completing the PAD entirely independently from the student.



Figure 22 Time mentor spent with the student completing the PAD

The limited time spent completing the practice assessment together is indicative of limited time for formative feedback, the opportunity for students to ask questions and other aspects of learning such as progress review and skills development. Incomplete documentation and poor feedback alerted tutors to substandard assessment. Tutor one suggested clearer instructions regarding formative assessment in the PAD would help.

T1 "This might be related to us clearly documenting in our practice books; please make sure that as part of the formative process, you have gone through the cluster skills and give the student an indication of where they're at and how they could improve. Because what their mentors are doing is, they are commenting on the cluster skills because there is a bit to comment on the cluster skills, but they're not necessarily actually looking at every element of the cluster skills."

5.4.6 Grade inflation

Two tutors (T1, T3) identified that sometimes the lack of detail in feedback from the mentor in the PAD led to grade inflation; the student was awarded a grade in practice, which was not supported by their academic profile.

> T1 "We found some students will be awarded a three but maybe because they were good at making tea because they smiled a lot. And then we've always feeding that back to our PECs [Practice Education Committees] or speaking to that ELMs [Education Liaison Managers] to say this is not good enough, that students are being awarded these grades and there is no justification. When we've asked simple questions to the students that are linked to that cluster skill, they can't answer the questions."

5.4.7 Not completing the PAD on time.

T1 reported that the formative assessment was sometimes completed remarkably close to the summative assessments, which did not allow the students time to improve before the summative assessment.

T1 "...sometimes what you will find is that if the formative is not done, some mentors [will leave only] a week or two weeks between a formative and summative. It is not really a fair assessment."

5.5 Discussion

As evidenced by the data above, the practice assessment was tainted by various practices that threatened its regulatory legitimacy. For example, incomplete or lost documentation, mismanaged formative assessment and insufficient evidence of mentor feedback of sufficient quality may mean that the students cannot progress or that they do progress without robust assessment or with grade inflation.

Section 3.2.4 of the SLAiP (NMC, 2008) stipulated that the 'OAR including comments from mentors must be passed from one placement to the next to enable judgements to be made on the student's progress.' This does not appear to have always occurred promptly and, at least in one reported instance, it did not occur at all. Access to the OAR was jeopardised because some students were losing their PADs, or sections of the PADs were becoming unreadable.

During the three-year pre-registration nursing course, there were NMC progression points at which mentors were required to confirm that students had achieved specified outcomes. The SLAiP standards required that Mentors maintain sufficient records to support and justify their determination whether a student is competent (NMC 2008, p41). Students could not advance on the course unless they passed through the progression points. In order that the NMC could ensure public safety, it required assurances that students had been signed off as 'capable of safe and effective practice at the end of a programme' by a sign-off mentor (NMC 2008, p42 [3.6.2]). Sign-off mentors were mentors who met additional criteria. Lost documents, incomplete documentation, or unsatisfactory mentor feedback during placements hampered the ability of mentors and sign-off mentors to make accurate judgments about students' competence. As a result, students may not have been able to progress or qualify. It was also an issue of public safety.

By not completing formative assessments on time or, sometimes, at all, mentors failed to provide the constructive feedback students needed to identify future learning needs. This would be especially concerning for failing students, as they would not be permitted to improve their performance and capabilities. Poor assessment practices also raise concerns about mentors' ability to fulfil their responsibilities (NMC 2008, p.28). It is possible that inadequate documentation and low-quality feedback in the student's PAD contributed to grade inflation. If mentors have insufficient information to grade students appropriately, this may lead to subjective decision-making.

Students and mentors did not appear to value formative practice assessment. Some practices, such as late completion or non-completion of formative assessments, appeared to be widespread; however, it was difficult to prove or monitor the scope of the problem. Late submission of assessments and non-submission of formative assessments appear to be acceptable practices by some students and mentors, despite academics' concerns regarding these issues.

At the time of this case study, the assessment of student nurses at ARU was fine graded. Consequently, grade inflation in practice would lead to a disproportionate rise in degree classifications. Speer, et al. (2000, p.12) define grade inflation as a 'greater percentage of excellent scores than student performance warrants.' The mechanism for grade inflation proposed by T1 and T3 appears to be a lack of understanding/competence of mentors around the significance of assessing knowledge and competence in addition to interpersonal skills.

It should be noted that the concern about grade inflation related to incorrect grading of practice is not limited to this study. Course and school administration at ARU observed an increase in nursing degree classification correlated with high grades in practice modules inconsistent with theory modules. This has led to a faculty decision to no longer fine grade practice and instead award pass/fail grades.

The NMC teacher standard required Nurse Academics within ARU (Personal Tutors) to supervise students in academic and clinical settings, set realistic learning objectives, and assess student performance (NMC 2008, p32). However, limited access to the students' PADs, which were sometimes of poor quality, impeded the personal tutors' ability to achieve this standard.

To achieve regulatory legitimacy, the eOAR must address some, if not all, of the concerns and illegitimate PAD completion practices raised by nurse educators. In addition, it must comply with all the NMC regulatory requirements (2008, 2010) and enable academics and mentors to support students more effectively and be supported in their roles. It was hoped that introducing an eOAR would solve several of the problems identified in this chapter. Chapter six examines the transition from the PAD to the eOAR

Chapter 6 Results: Moving from the PAD to the eOAR

6.1 Introduction to chapter

Chapter five focused on the regulatory legitimacy in the use of the PAD. It revealed aspects of how the PAD was being used which did not meet the standards set by the NMC (2008; 2010). These included 'tatty' documents, students not bringing in their documents for completion or formative review, incomplete assessments, poor quality of mentor feedback and grade inflation. These practices were not legitimate, as they threatened the validity and reliability of the assessment. Therefore, it was evident that practice assessment improvements were needed to meet NMC regulatory requirements and offer the student a fair opportunity for formative learning assessment and reliable evaluation of their progress and competency. The eOAR was introduced to improve the quality of regulatory compliance and student nurse learning and assessment.

Chapter six focuses on analysing the data around the education of the mentors, students and tutors in preparing to use the eOAR and how this helped or hindered the success of the innovation. This chapter focuses on addressing the third research question.

Why was digital practice assessment difficult to introduce in the learning landscape?

6.2 Learning Strategy

Mentor, student and academic education on how to use the MyProgress app to complete the eOAR was deemed crucial to ensure the successful adoption of the app into the community of nursing practice. Student nurses participated in a two-hour workshop in which they learned how to complete the eOAR and the technical skills necessary to use the platform and tablets. Mandatory attendance at the workshop was rewarded with the distribution of a tablet to each student. A mock assessment form was sent to each student's MyProgress account after the workshop. Students were required to complete this prior to commencing their placement. The mock assignment tested their knowledge of the MyProgress app and ensured they could successfully download it, complete an assessment on a tablet and sync it with their main account. Completed assessments were stored on Microsoft Azure-hosted

cloud servers. Students who did not attend the workshops were followed up individually or in small groups. The students were also instructed to safely and properly use the tablets within placement areas. They signed a user agreement confirming that the tablets would be used in accordance with The Code (NMC, 2015) and that any violation of the NMC standards of practice and behaviour would result in appropriate disciplinary action being taken by Anglia Ruskin as per the University regulations (see Appendix 20).

I hired and instructed an intern in the use of the MyProgress app. A recent master's graduate in media studies, he provided the students with additional support following the initial training. During office hours, he managed a help desk for the students, mentors, and academics. On the days the students were on campus, he was also available for informal group or individual training. Most of this additional training focused on digital literacy. The academics received one-on-one training in using the app from the intern and project manager. Academics frequently requested assistance the first few times they completed a digital assessment. After his internship, the intern was recruited as a junior learning technician to provide ongoing support for the eOAR.

Before the students entered placement areas, all clinical areas supporting students using the app were offered training either on the ARU campus, in the placement area or through an online learning package. We provided on-demand training in all placement areas in year two due to increased team resources. Training commenced four months prior to introducing the eOAR and continued for two years. Some placement areas planned and mentors were provided with training ahead of the innovation being deployed. Other placement areas did not take up the offer of training until the students arrived in placement with the tablets when there was a surge in demand. Over 600 hours of training in placement were provided over two years. Despite planning efforts, training was resource-intensive, often necessitating long-distance travel after confirming the day before that the workshop was proceeding, only to discover that no mentors would be present. To address training issues, in a few of the larger placement areas, I conducted some train the trainer sessions to allow placement staff to provide on-site training. ARU provided tablets to deliver training and supporting openaccess online resources. A variety of approaches to education and training were used. Training and educating users was challenging. The training had to be adaptable, ongoing and additional staff resource was required.

In the second year of the case study, an experienced nurse mentor was hired on a 0.8 FTE contract, on secondment from one of the placement providers, to train the practice mentors. Previously, I conducted all the mentor training myself. The subsequent sections describe the experience of mentors, students and tutors of the training. The discussion incorporates survey data from mentors, student focus groups, and tutor interviews.

6.3 Training and support themes

Training in using the MyProgress app included three user groups: mentors, students and academics. The data relating to the education of these groups and its contribution to the success and challenges in introducing MyProgress initially emerged from the student focus groups and tutor interviews. Some themes identified in the qualitative data from students and mentors were incorporated into the mentor survey, including the emergence of a role reversal in which students articulated their experience teaching mentors how to use MyProgress. The objective was to determine to what extent there was complementarity or divergence (see 3.6.2) (Creswell and Plano Clark, 2017) between the academic, student and mentor experiences of learning how to use the eOAR.

Students, mentors and academics all discussed issues about training delivery and the need for ongoing training and support. For mentors and students, a theme around a role reversal in novices teaching their mentors how to use the eOAR also emerged from the data.

6.3.1 Mentor training delivery and ongoing support

Preparing the mentors to use MyProgress was the most challenging aspect of introducing the eOAR. It was the most frequently coded topic in the focus groups and interview transcripts around education and training, with 21 counts.

All the mentors who participated in the survey had mentored at least one student using MyProgress. A total of 46 mentors (74%) had supported more than one student, with 22 mentors (35.5%) supervising three or more (figure 23).



Figure 23 Number of students each mentor respondent supported using MyProgress

Table 10 below outlines the training that mentors received in using MyProgress.

Mentors in the community favoured face-to-face training provided by the MyProgress team from Anglia Ruskin, whereas hospital-based mentors more frequently used the online training. A higher percentage of hospital-based mentors (51.5% / n=17) had received no training compared to those in the community (34.5% / n=10).

	Mentor w	vork locat	Total			
	Commu	nity	Hospital			
	No	%	No	%	No	%
Group training where I work with a trainer from ARU	10	34.4	5	15.1	15	24.2
Group training with employer	2	6.9	1	3	3	4.8
One to one training with trainer from ARU	1	3.5	1	3	2	3.2
One to one training with employer	3	10.3	0	0	3	4.8
Online ARU training for mentors	2	6.9	9	27.3	11	17.7
Online training for mentors via ARU helpdesk	1	3.5	0	0	1	1.6
I did not receive any training	10	34.5	17	51.5	27	43.5
Total	29	100	33	100	62	100

Table 10 Contingency table indicating the relationship between mentor location and eOAR training received

Of the 27 (43.5%) mentors who did not receive MyProgress training, the main reason was that they were unaware of the training (figure 24).



Figure 24 Reason mentors did not attend MyProgress training

The experience for most mentors who had not received MyProgress training was that they first noticed the move to using a digital version of the PAD when the student turned up in placement with the tablet.

M41065364 "The first thing I knew was when a student presented me with his tablet and told me that the university said that his mentor would know what to do."

Some mentors only became aware of the availability of training when completing the survey for this research.

M41214172 "This is the first time I have heard of there being training! It would have been helpful!"

Despite the significant efforts of the MyProgress team to provide training, the message to attend was not reaching the mentors within the trusts; there appear to be a variety of reasons for this. There are suggestions in the data analysed later in this chapter that either they ignored it, did not see it as a priority, or were not being told how to access the training. Although figure 25 indicates the scope for improving the preparation of mentors, the majority of those attending rated the training satisfactory or above.



Figure 25 Mentor rating of MyProgress training

There were several reasons the training provided was perceived by some mentors as inadequate or only satisfactory. The timing of the training was important. With four hospital trusts, two community trusts and many independent sector placement areas, it was necessary to commence training several months before the eOAR. Some mentors reported they had forgotten what they had learned in the intervening time between the training and working with the eOAR.

M411007862 "I did the training, then there was a big gap before I had a student with MyProgress, so I had forgotten a lot of it."

Some mentors rated their initial training as excellent–but needed more follow-up training and support.

M41072132 "The group training was a one-off session with appropriate equipment and a well-informed trainer, but it was not followed up by any

ongoing support that could be accessed when questions/problems arose when we were working with students. It became very frustrating and led to a lot of demoralisation in the mentor team.

The online training received mixed reviews. Some mentors liked it.

M41067045 "The online training is good. It is very easy to complete."

Others specifically wanted face-to-face training. New mentors also appeared unhappy because they were unaware of how to access MyProgress training.

M410826185 "The mentor organiser could inform new trust mentors specifically about this system, what it entails and where / how to complete training, rather than just referring people to the hefty ARU website."

The mentors who did not receive training viewed training as necessary and wished they had the opportunity to participate.

M412355 "I would have loved to have this training instead of me figuring it out myself or asking the student nurse."

Despite hundreds of hours of flexible training being delivered to mentors in their placement areas and the message being distributed via work emails and newsletters, almost half of the mentors reported they had received no training, and many said they were not even aware that it was available. The academics were aware of this and surprised; they postulated that the reason was that mentors were not reading the messages being sent as they were not seen as a priority.

T1 "know that the trust had been doing a lot of work to make sure that all mentors are aware of the of the new electronic assessment and they had put out all sorts of newsletters, all sorts. And then students were going out and mentors had never heard of it. But I think that's probably related to when people received emails that they think are important; they don't necessarily look at them."

Concerns about an apparent lack of mentor training/uptake were the key issue for the students. Seven of the students (S1,S2,S3,S4,S5,S6,S10) raised this issue. The students were aware of the training the mentors were not engaging in.

S5 "You'd offered a lot of training and it's just people hadn't taken it up, so it was hard to have them complaining that they hadn't had training without thinking actually 'you were offered it but'..."

Some students were frustrated that mentors had not undertaken any training and wanted the University to ensure that all mentors were engaged. Some students believed that the University had not provided the mentors with adequate training.

S1 "Really making sure that the mentors we're going to are trained in it [eOAR] or have physically had a tablet in their hands and had to do something on it, that would be helpful."

It is possible that mentors did not recognise that the shift to digital practice assessment was imminent or legitimate. Some mentors did not see it as a priority, which contributed to poor engagement with training. S2 describes how one mentor appeared to be in denial and did not believe the change would happen.

S2 "Well, quite interestingly, my last mentor, she had her yearly update training just before I came to placement. And she said to me when I explained the tablet, 'oh yeah, we had a session on something called MyProgress, but I thought they were joking. I thought that it's like something that might be done somewhere in the future and here I am with the tablet ready to.' So, she was like really surprised." The consequence of the mentors not engaging with the training was that they were unprepared when the students arrived on the wards with the eOAR. S6, S1 and S3 describe how this meant they needed to take responsibility for teaching their mentors how to use MyProgress

S1 "My mentor had never heard of it and was so shocked that I didn't come in with it in a book, was so not a tech-savvy person. The simplest way was to have a computer version there and print off other things and her sort of go through it like that. I had to be more proactive in doing that because she was less technically able."

Some students found that providing their mentors with the details of the online training helped allow their mentors to access MyProgress training at a time and place that was convenient for them.

S4 "By having an e-learning for them just to say, 'if you have any questions, things that I haven't covered, have a look at this programme here.' Anyway, I think the eLearning programme really helped as well to supplement it because it felt like there was more support around rather than just, you know, some second-year student coming in saying that we've got this new programme. Just to say there's an actual resource available for you here, you know, it made them feel like it's a real thing, if that makes sense. Rather than something that's just been brought in a bit on the fly, they've got to deal with it."

While some students successfully directed and supported their mentor in accessing the online training, other mentors struggled to complete it.

T4 "They like to see me, so although the online training is there, lots of them had problems actually accessing the online training."

Some groups of mentors, particularly in placement areas where less technology was used, were more anxious and resistant to the change. One tutor used the tablets in the teaching session with the mentors to help them overcome their fears.

T4 "It's always worse when there's less digitalisation in practice in the area. So, for example, I spoke to a group of learning disability nurses who asked me to speak to their team, which I did and it was a really nice meeting and I said to them it's like electronic practice, 'Oh, we're not doing that'. And you could see as we were going around the room. I handed out the tablets, cos as you know, I put the presentations on the tablets, and getting them to work them. I spent quite a lot of time just going over and swapping over the tablets to give them one because they managed to switch it off or turn it around or whatever, so there was obviously. ...a lot of fear in the room about doing this digitally. They didn't recognise that when they went into the assessments, the wording was exactly the same."

It is interesting to examine the extract above. There was some nervousness about digital innovation in general, rather than just the eOAR; the mentors said they were 'not doing that' before they tried to use the system. Although the assessments were the same on the eOAR as the PAD, the mentors did not recognise them. The only difference was that the assessment was no longer a single document to be submitted at the end of the placement. It had deliberately been divided into segments so that the formative assessments were submitted as completed. This was to enable tutors to track the students' ongoing progress and detect any issues early. The mentors were moving from a handwritten document they were familiar with to completing it on a tablet device they appeared nervous about using. Even switching the tablet on and off was a challenge initially. The unfamiliarity of the process and anxiety around completing the assessments meant some mentors did not recognise them.

Using MyProgress required mentors to navigate assessments on an app. Using an app requires acquiring specific digital skills and knowledge of how apps work. It is clear from the quote above from T4 that digital education was required. Although mentors may be familiar with using their own digital devices, this knowledge was not necessarily translated into using smart devices in a professional capacity. It became evident that we needed to educate
mentors on using the MyProgress app and crucial skills for app use in general and how to use the tablets provided by ARU.

It was evident from the data that although some mentors undertook the online learning package, many only learned how to use the eOAR when they began to use it. This suggests that learning how to do something, in theory, differs from the actual practice, and competence is only acquired with experience.

T4 "But even those who have done the online training are still not learning it until they do it in practice."

With fewer than half the mentors having attended training, student nurses were allocated mentors, experienced in assessing students using the PAD but were unfamiliar with how to complete the digital version and had limited digital literacy.

6.3.2 Student training and ongoing support

The students initially received a two-hour training session on campus during one of their theory weeks. When the students were asked to comment on their training, they focused on their excitement about using a tablet device for their practice assessment and were receptive. However, they said nothing about the training itself.

S6 I was excited. I thought, 'oh, my god, my writing,' you know, and we're using a tablet, it's going to help, perfect, you know, nobody has to, you know, read my writing. Oh my god, it's a good idea.

S7 Yeah, I was thinking, 'oh this is pretty cool, it's something new, I'm quite looking forward to giving it a go' So I think I was just a bit open to start off with, and just see how it goes and what happened.

However, tutors commented students needed longer or an additional practical session using the tablets in class.

T4 "I think that maybe if we could have longer with the students before they go in and get them again to do the role-play thing, which seems to work quite well with the mentors, where they have to actually have to complete an assessment on each other and fill in the form so they can actually see the intricacies of actually doing it."

All academics considered the intern's support provided to student nurses an excellent resource. T2 echoes the sentiment of all the tutors interviewed.

T2 "But xxxxx has gone down as many times as people have needed it. He has given extra tuition to people; he has been great. I'm not the first person to say this, am I? He is a great resource for them. Because I'll just say work-based learning are in today, well he said I just come down if you need help. So, he'll come down and speak to the group. He'll continue to speak to individuals. Which is great for the students to know that because I can talk about them about the assessment of it, but I can't really talk about the intricacies of it.

Whilst the students did not mention the support above in their focus groups, anecdotal evidence suggests they valued it. Frequently, when I offered training myself, the students would request support from the intern instead and articulated to me how helpful they found him. As a recent graduate, he was similar in age to many of the students. The message I received from students was being close in age to themselves; the training was from a peer, informal and felt unthreatening.

One issue with the training of students was that the MyProgress team was teaching the students how to complete assessments digitally; however, the role of teaching about the assessments requirements and learning outcomes fell to the academics. In the transition period, tutors used the paper documentation to explain the assessment requirements and the materials provided for tutorial sessions by the module leader about practice assessment

revolved around the PAD rather than the eOAR. This was partly because the module leader was based on the Chelmsford campus, where the eOAR was not yet used. Tutors also failed to challenge the inconsistency in the teaching about the PAD and students using the eOAR.

T3 "The other thing that was interesting was my new group, my January 18 group, they've gone straight into using MyProgress. I went through the book with them. I had to use the book rather than MyProgress to allow them to see it and to visualise it if you like. And all of them asked for a copy of the book so that they could visualise it while they were going through with their mentor.

There was a great range in the ability of the students to learn how to use the eOAR. T6 describes his issues with a student who had struggled to complete the eOAR.

T6 "I remember two of them. Actually, they never had used it [eOAR] and the last few weeks before the submissions, one afternoon, a student came to see me to print out the documents and he started with blank. When I tried to speak again with Tutor X, she said, 'Well 'B'., what can I do? I have seen this student five times. I went to see him in practice and then I said to her, 'I am so sorry, but on the day he submitted his document, he did nothing, basically.' So, what we did actually was give him a bit of an extension and then luckily, I think he felt more confident after that."

Having identified variability in students' digital literacy, a peer support approach was attempted. Ten 'digital scholars' were recruited from the cohort. The digital scholars' role was to support peers in using MyProgress and help lead the change. All students in the cohort were invited to apply. The Digital Scholars were provided with additional training in MyProgress and the opportunity to develop leadership skills and participate in events that would enhance their employability skills.

S10 was one of the digital scholars and participated in the focus group. She demonstrated her enthusiasm for and frustration in helping lead the change and articulated that nurses have a professional responsibility to learn and adopt innovations.

S10 "Part of the NMC code to me is to make sure that you keep up with the times, that you keep up with the evidence and so on. You need to also take the time to have a look and see how this is working to get the full benefit of it because if you learn how to learn it properly and not, as we mentioned, something that mentors weren't aware of, that could've saved us so much time...."

The digital scholars were beneficial in liaising between the students and the project team to raise issues that needed to be addressed and suggest how best to support them. The digital scholars' value rested in that they were near to the students in terms of experience and contributed creative ways of enhancing the learning experience of student nurses.

S10 "Because I think the way it was, you had people who don't like change, negative. You might have somebody who's not as confident about asking questions to put things right in their mind. I think if we had small groups, [demonstrating] 'This is how this is working' 'You can sit there' 'I'm going to come and have a look and see what you're doing' 'Have you got any questions?' and have that, then it might have been a lot better as well. and there wouldn't have been so much resistance and negativity to finding it quite challenging. And, also, if I ever had a question, I'd like to thank you guys cos I always got a reply virtually straight away, so I thought that was pretty good from that point of view as well."

6.3.4 Academic training and ongoing support

The academics were initially apprehensive and while they identified they needed support and guidance and some struggled more than others, they were all willing to learn to use the eOAR.

> T6 "But following the training, I think everything was made clearer, although I remember when I started to use it, I needed a lot of support from xxxx, basically. Luckily, she was quite helpful, and you

were involved as well when we had an issue surrounding how to utilise the tablets. So, training, to me, was important and we were introduced properly so that my anxiety went away."

A single training session was not sufficient for academics. While learning to use MyProgress, they needed access to additional support to reinforce learning and solve any issues that arose.

T2 "When I first saw it, I found it a bit complicated and I needed support with it. Maybe support because of my age and technology, but I'm a bit better now. But then, in between using it and not using it, I forgot a lot about it because if you've got groups in and you only use it every six months, you quickly lose skills with it like a lot of jobs. So, I needed support. I found I got support whenever I needed it, so I felt, I felt happy to ask for support. I felt that yourself, the organisation were very willing to help us, and I did need help. So, the very first time I used it, it did work fine. So, from then on, I carried on."

The tutors viewed the support they received very positively. T5 describes how he could access help when he needed it.

T5 "Very good. I didn't have any problems. We had 'A'. He was very good and you, I came to you a few times, since then with any problem I've got. 'B' has been brilliant, and she's here sometimes that helps. Was a bit of a challenge sometimes when they weren't here? But I did PADS last week, and 'B' was in the office on two occasions. One student hadn't had her summative signed off and I didn't know what to do about that, and one student had emailed some of the assessments to her mentor, so I thought, well, I don't know how to access it. So not realising that I couldn't access it at that point. "

It was clear from the interviews that the tutors did not understand or use the entire functions of MyProgress, and additional training needed to be available. They had not yet grasped the data analytic functions. Tutors understood how to view individual student accounts but were unaware of the functions of extracting aggregate information on whole cohorts of students or assessments. The conversation with T5 about how he gathers the information about the mentor details from MyProgress illustrates this. T5 accessed each student's account individually to find their mentor details, which is time-consuming. Instead, it is possible to draw this information off MyProgress very quickly with the data for all students in a single spreadsheet.

R "How do you get the mentor information from the students? "

T5 "They send it to my emails. But with MyProgress, we can actually see the form so that is complete.

R "So, are you checking that on their individual accounts? "

T5 "Yes, individual accounts. "

R "So, you don't know that you can actually bring up a single spreadsheet with all that information on it? "

6.3.5 Novices teaching experts

As many of the mentors had not attended the MyProgress training, the students were often more competent in its use than their mentors. This resulted in a reversal of roles and a shift in which the novice became the expert and students taught their mentor how to use the app. This theme emerged strongly from the student focus groups, with eight student nurses (S1, S2, S3, S4, S5, S6, S9 and S10) voicing their experience of this role reversal. Two tutors (T1 and T4) identified and powerfully confirmed it in the mentor survey. For some mentors, this was an uncomfortable experience.

T4 "There was something about the change in the relationship between the mentor and the student, and it was something that came up in conversation with the learning disability nurses who were very unfamiliar with digital approaches. And a couple of them had experiences with students using the tablet and one mentor said that he found it really challenging because he was the expert and was expecting to mentor the student and he felt he couldn't ask the student what to do. The student was telling him what to do on the tablet and he felt that was not acceptable in the relationship that they had."

S1 found herself in this reversal of roles and discovered that some mentors did not like being taught by a student; this was difficult. As a result, she needed to develop strategies to adapt to what she described as 'weird territory'.

S1 "Some level of developing patience when people are getting frustrated with something and you keep going trying to be the motivator. Then developing some way of passing information on to people who are higher than you and you understanding something that they don't, and that can quite often be like a weird territory, mentors are like 'I've been a nurse for blah blah years' they don't often like being told what to do, so you have to find your own way of paddling out of that, getting round that, whatever way you choose to do it."

Teaching her mentor to use MyProgress made S9 feel pressured, as she was still learning to use the platform herself and did not feel equipped to do so. This was made more challenging, as there were ongoing developments to the app in response to user feedback.

S9 "I felt there was pressure on me because I've had it for two years, so I should know what I'm doing with it, and I don't. And I felt, especially about this placement because it looked so different and like, just and it was 'Oh, I've not seen that before'. I know that's because you're making changes to improve it, but it still puts pressure on us because we're not used to it yet, and we should be the ones that should be able to teach the mentors, but if it's still new to us, well, it still feels new to us. That's what I thought difficult and I felt like I should teach them but I still, oh, was just in it together like not really knowing what to do."

On some occasions, students experienced the negativity of mentors who did not want to change. For example, S4 encountered a mentor who did not like MyProgress and described how she ceased trying to teach her. Instead, she suggested the mentor complete the assessment on paper and then type the digital copy for her.

S4 "It depended on the mentor. Sometimes there was an initial 'I don't like this.' Some felt quite defensive over it. They really did not like the whole electronic system in the first place, and some of the criticisms I have in terms of they felt like they couldn't get what they meant down and it's a lot easier for them to think with a piece of paper and write it down like that. But then I suggested, 'Ok. Why don't we get a piece of paper, leave you alone, you write it down like that and we'll transfer it to the computer if that's easier?' Other people embraced it and were interested in it."

Students experienced a wide variety of engagement from mentors. Some were eager to learn how to use MyProgress; others were more reluctant. S6 describes how she used her enthusiasm to overcome the reticence of her mentor and taught her how to use the app.

S6 "When I started using it, I think some mentors were like, 'oh my god, what are we doing with it?' So you know, I was more or less, because I was excited 'bout it, so I was just like, 'Right it's just the way you use your phone,' so they liked the idea, and when they started using it, they were just like, 'Oh actually, it's not that bad' and they didn't even need me to help them to do it, they were just going with it enough until they did what they needed to do."

Another student, S10, used humour to get her mentors on board and described how she was patient with her mentor while she learned, and S10's mentor was patient with her in return. This was partnership learning.

S10 "We all muddled through together. I think if you have a sense of humour about these things, you just work through it. It's something we had to do. We had to adapt to it and start using it and that's what we did; you just have to have a lot of patience with each other as well." Being proactive, organised and competent in using the eOAR and supportive gained S3 the respect of her mentors.

S3 "At placement, I think for me, the tablet has made my mentors, in particular; think a bit more highly of me. Just because I'm organised with it, I can take the lead a little bit and make it easier for them. It really shows that you're on the ball."

Having seen the student respondent's perspectives of role reversal above, figure 26 below summarises the mentors' attitudes toward students teaching them how to use MyProgress. While most mentors did not appear to have a problem learning digital skills from students, a sizeable minority of mentors held the traditional view of master and apprentice who strongly agreed n=3 (4.8%) or agreed n=10 (16.1%) that it was inappropriate for students to teach mentors.



Figure 26 Mentors' attitude to students teaching them how to use MyProgress.

Most mentors (74% / n=46) agreed or strongly agreed that the students were confident in using MyProgress. Furthermore, 67% (n=42) of mentors agreed or strongly that students were good at teaching them how to use the app (figure 27).



Figure 27 Mentor assessment of students' ability to teach mentors how to use MyProgress

Just as in the student data presented above, the mentors offered a wide range of views from positive to concerning about the students' supporting their digital literacy. An analysis of the free text in the mentor survey provided greater illumination on mentors' attitudes to students teaching them and this role reversal. Many were happy to learn from their student, acknowledging that this could be a positive experience for the student and acknowledging that sometimes students had better digital skills than they did.

M1192547 "We can learn from each other; quite happy for the student to show me how it works. it builds their confidence."

Some of the mentors' reticence in students teaching them mirrored that of some students who felt they did not have sufficient skills or knowledge to undertake the task.

M41263400 "I have had three students who had the tablets, but I can say only one really knew how to use the MyProgress well. I had to ask other mentors for clarification to make sure I am doing the right thing."

One mentor felt quite strongly that it was inappropriate and unprofessional for students to educate their mentor and that this was unfair to both parties.

M41226109 "Students should not be used to teach mentors how to use MyProgress. This should be done separately by professionals who are trained the system. It is inappropriate on and unprofessional to expect students to train their own mentors. I am guite shocked that this is an expectation. This is unfair for both the student and mentor. My computer skills are good; however, I would expect that I would be given a basic tutorial on the new software and not just rely on what my student tells me is correct. There are many students that do not have the required skills/personal attributes to teach their own mentors, which I have had first-hand experience with."

Another mentor expressed the traditional view of the students as novices.

M41258667 "it's not their role to teach; their role is to learn."

Another mentor expressed concern that students would take advantage of mentors if they were teaching *them*.

M41364325 "I would just be concerned about some students using the lack of mentor knowledge to their advantage."

6.4 Chapter Summary

Although the training strategies for mentors, students, and academics varied, all the users required additional ongoing training to what was initially planned and offered in order to acquire the necessary skills to complete the eOAR. A single session was insufficient for many users. One of the challenges of transitioning to an eOAR is having sufficient and sustained training resources to meet this demand. MyProgress requires support before implementation and additional training once in use and needs to be continued for an extended period. In general, the training was viewed favourably, but the timing of the training can be problematic. There were large numbers of mentors in widespread placement areas, making mentor preparation particularly difficult. Inadequate training and a lack of ongoing support and communication about available training appeared to affect some users' experience adversely, potentially slowing users' acceptance. Several initiatives were implemented to improve training and support, including an online training package, the hiring of an intern, the recruitment of digital scholars to assist students and the secondment of an experienced mentor from a healthcare trust to assist mentors. The study demonstrated how resource-intensive the transition to a digital platform is. Using digital scholars to assist their peers was advantageous. It also allowed them to develop employability skills, such as leadership and teaching abilities.

While most mentors and students supported and appeared at ease with this, one mentor expressed concern about students exploiting her lack of eOAR knowledge. Concerns about students manipulating mentors during the assessment process are not new. Hunt, et al. (2016b) categorised coercive students as ingratiators, diverters, disparagers and aggressors. The mentor who expressed concern about being exploited because of her lack of knowledge in using the eOAR appears concerned about what Hunt and al. define as disparagers. In this type of coercion, students may question the competency of a mentor, thereby 'belittling' them.

The role reversal of novice teaching experts will be addressed in the discussion chapter, as it requires further investigation.

This chapter examined the difficulties in preparing students, mentors and academics to use the eOAR and providing sufficient training as contributing factors to introducing practice assessment into the learning landscape. Chapter seven continues to address question three by examining the difficulties academics, mentors and students encountered using the eOAR.

Chapter 7 Results: Why is an electronic practice assessment difficult to introduce

7.1 Introduction to chapter

The data in chapter six indicated that all eOAR users require education and support to improve their digital literacy and assessment comprehension. The difficulty of communicating with and supporting geographically dispersed mentors constituted a significant obstacle.

Chapter seven continues to examine the third research question

• Why is digital practice assessment difficult to implement in the learning landscape?

Chapter seven advances the journey forward and converges the data from students, mentors and academics on the challenges encountered in the 'swampy lowlands' (Schön, 1987) in executing the change, as well as continuing to explore question three further. This chapter explores the obstacles in the path toward the eOAR's legitimacy being recognised by nurses, students and academics. Prior to the data collection for this case study, some of the app's technical issues had already been identified and resolved through the day-to-day support of the users. I reflect this in the narrative below, where students and faculty noted that some initial issues had already been resolved. Consequently, this chapter addresses the challenges and intersperses accounts of how I dealt with some difficulties.

7.2 Obstacles to introducing an eOAR

Student focus groups and tutor interviews identified five obstacles to adopting the eOAR: digital literacy, change, software, hardware, and governance. The table in Appendix 21 provides counts of the open codes associated with MyProgress challenges. It displays the number of students and tutors associated with each open code. It tallies the number of times each code was mentioned in the student focus groups and tutor interviews. Figure 28 presents a summary of themes that emerged as a frequency pyramid, along with the total

number of occurrences. The base of the pyramid comprises the most frequently coded concepts. This chapter will explore four of these themes. In chapter 8, the remaining theme, "change," is examined.



Figure 28 Pyramid of obstacles to introduction of eOAR

Within the mentor survey (n=62), two additional codes not identified from the student focus groups or tutor interviews emerged. Both fit within the existing five core themes.

Outdated browsers (software)

Students not bringing in their tablets to placement (governance)

7.2.1 Digital Literacy

In all participant groups, digital illiteracy was the most frequently occurring theme in the qualitative data. It was present in all tutor interviews and every student brought it up. The community of students, mentors and academics had varying levels of digital proficiency. While limited digital literacy was a real barrier to introducing digital assessment, competent digital literacy resided in some parts of the community. This section focuses on drawing out and highlighting the challenges in line with the research question and meeting the aim of learning how best to facilitate this change most effectively.

7.2.2 Predictive text

Predictive text is a feature available on all mobile devices currently available. When a user inputs letters, the system suggests words that the user may wish to include. The predictions are based on the context of the surrounding words and the initial few characters typed. Because the student or mentor only needs to select the offered word rather than type the entire word, the predictive text should accelerate the completion of the assessments. The mobile device improves its ability to predict text as it learns and becomes familiar with the user's inputted vocabulary. Several students, however, found the predictive text to be unhelpful. An aggravating frustration was that the word offered was incorrect and that the predictive text slowed rather than accelerated the input process. Students reported that this caused them problems and irritated their mentors as well.

S7 "So that's much harder work because, especially if you're on a busy ward, that is taking a big chunk of time out. You know, and a lot of that is to do with the predictive texting."

Medical terminology was an area in which the predictive text was unhelpful.

S10 "You're putting in Lisinopril and it comes up with Lanolin."

Many students and academics were unaware that they could switch the predictive text off or did not know how to disable it.

S7 "It is to do with them putting things in and then going back and going, 'Oh, that words changed to' whatever and that's really time-consuming."

25m 20.06s S9 You can't take it off, can you? 25m 22.74s S9 I don't even know how to.

T5 also had an issue with the predictive text, which could have caused an issue with a student had she not spotted the error before they released the feedback.

T5 "I've been careful of changing names. So, if you spell a name that's from overseas or something very complex, it changes it. Which I didn't realise, it auto checked it."

R "You mean predictive text?"

T5 "Yeah. It changes it to what it thinks you want to write. And I didn't realise, and I'd put in a name that was very complex, and it came out, and I've submitted it to the student, and it said a drug dealer."

Figure 29 below shows that 32 (51.6%) mentors found the predictive text either extremely useful, very useful, or moderately useful. Seven (11.3%) mentors did not find it useful, and 18 (29%) could not comment. It is possible that mentors unable to comment completed the eOAR on a computer, or the student had turned it off on their mobile device so did not encounter it.



Figure 29 Mentor rated usefulness of predictive text on tablets

The issues students, academics, and some mentors encountered with predictive text could have been avoided with some education on how to disable the feature on mobile devices.

7.2.3 Wi-Fi and syncing

It was understood from the outset that Wi-Fi or internet connectivity would not be available in many placement areas. This was the primary reason for the decision to provide students with tablets. The MyProgress app worked without the need to connect to the internet or Wi-Fi in the clinical area. Assessments were completed and stored on the tablet until the student had access to Wi-Fi, such as at home, on the university campus or one of the many public Wi-Fi systems available. This also ensured that no student would be disadvantaged because of the cost of data transfer. Once connected to Wi-Fi, the assessments were "synced" with the main student account and stored on a secure server in the "cloud." Mentors and students were taught that Wi-Fi was not required in the placement area to complete the eOAR on the tablet. Several mentors did not comprehend this and they identified poor internet connectivity as a problem.

M41072132 "Internet connectivity in our rural area was not conducive to stress-free mentorship!"

Syncing a mobile device is a quick and seamless method for transferring data from the memory of one device to the memory of another. It is a feature available in all modern Android and iOS devices, enabling the phone or tablet to send or receive information. The mobile device must be connected to Wi-Fi or, in the case of a smartphone, mobile data for synchronisation to function. Some students had difficulty syncing their tablets, so many opted to complete their assessments on a computer.

T5 "I think a lot of them find it, like me, it easier on a computer. They're saying it's easier because of the sync, they sometimes can't get it to sync across. So, they say they do it on the computer; it's already there, they don't have to worry. So that's the type of feedback they've been saying."

Some students had difficulty syncing their tablets because, unlike their phones, they lacked mobile data. To synchronise the tablet, a Wi-Fi connection was required. Students who sought support with syncing mistook the icon that identifies a Wi-Fi signal (see figure 30) for confirmation that they were connected to Wi-Fi. Having a signal does not mean that you are connected to the Wi-Fi router.



Figure 30 Wi-Fi signal icon

Also contributing to the confusion was that with MyProgress, documents only sync from the tablet to the cloud/computer-based account and not vice versa, and assessments saved as drafts did not sync and could only be viewed on the tablet.

S2 "So when you fill in a document on your tablet, and you save it as a draft and then you sync it, I don't think the computer sees it, or is it the other way round? The computer will see the draft on the tablet, but the tablet won't see the draft on the computer?" Students who completed assessments on both the computer and tablet did not know where to locate their completed forms. Students and mentors could use either platform, but they needed to remember to finish each form on the platform they began it on. Therefore, if they started a form on a tablet, it had to be completed on the tablet, and if they started it on a computer, it had to be completed on the computer. Some students, for simplicity, completed all the assessments on a computer.

S7 "I've done [the assessment] on the tablet by myself, then they don't correlate with each other and that's quite frustrating cos me being me, I can't remember what's where and what I've sent and what I haven't because everything is still listed there, and that is quite confusing. Whereas if it all was just at one point, then you'll know. And on the computer, at least when it's completed you can see it's completed, straight away and that's it, it's gone."

If a student began completing an assessment on a tablet prior to meeting with a mentor and the mentor wanted to complete it on a computer, the assessment would have to be manually copied over or begun again.

> S2 "So I think that would be better because you can't guarantee you'll be working on your tablet throughout your placement. Sometimes they say, 'oh no, come here, we've got a computer', so it would be good if the draft learning contract I was halfway through, my mentor would rather finish it on the computer. It would be better if the computer would pick up the draft as well. I think that's the main thing I found that would be better."

Tutors also lacked an understanding of how syncing worked and could not guide students. They believed assessments were being synced to an incorrect location. In reality, the student was not connected to Wi-Fi when syncing, so the assessments remained in the "outbox" awaiting transmission. This is like the method used to store sent emails when a computer is disconnected from the internet.

R "Do you know how syncing works yourself?"

T5 "Only in the basic sense that if you sync something, it is joining together and then it downloads whatever you need it to do, and that's about it, really." Originally? How to use it. How to sync it. There's still some that don't always sync correctly. So, it doesn't always go to the right place.

Mentors found it easier to store and save assessments on a computer than on tablet devices. Syncing the assessment was the students' responsibility as they were expected to do this in a Wi-Fi accessible area and not all placements had access to Wi-Fi. However, some mentors attempted synchronisation (figure 31).



Figure 31 Mentor ease of saving and storing assessments

Wi-Fi networks in NHS placement areas were of varying quality. Where the network was poor, this sometimes caused problems with syncing that was perceived to be an issue with the app when it was an issue with the placement network. I advised students to sync their devices at home or on the university campus to avoid problems.

7.2.4 Updating the MyProgress app

Figure 32 below demonstrates that during the two years the students, mentors and academics in this case study worked with the eOAR, there were nine app version upgrades. These updates occurred every two or three months throughout the case study (and remain ongoing). We implemented the updates to enhance the app's functionality, usability, and security in response to direct user feedback. Frequently, students did not utilise the most recent version. Only two students used the latest version (v6.2.6), while 27 never updated the app from the original version (V5.3). The ability to keep apps updated is an essential digital skill. Students who failed to update the app did not benefit from software enhancements. When an update was released, students were notified via their MyProgress account and via email with instructions for updating the app in the app store (for iOS devices) or Google Play Store (for Android devices). It was also possible to use the tablet settings to ensure that, when connected to Wi-Fi, it automatically upgraded the app to the most recent version.

In response to user feedback, Anglia Ruskin collaborated with MyKnowledgeMap to improve the platform's usability, as reflected in the app's updates. Some of these were minor upgrades, such as removing a thirty-day authentication rule from the app that was locking students out. Multiple enhancements to functionality and security, such as reducing the risk that students could delete draft assessments, adding the ability to upload documents and photographs, and enabling better categorisation and sorting of the assessments to facilitate navigation, were also implemented Some major upgrades included automated functionality, such as the tracking of assessment completion viewable by students, mentors and personal tutors. Figure 32 below identifies all devices connected to the MyProgress account for the cohort at the conclusion of the case study/the student course. If a student was using multiple devices or began using the university-provided tablet before switching to their own device, they will be counted twice. Therefore, there are more electronic devices than students. This means that some obsolete operating systems may have been on devices no longer used.



Figure 32 App version on student's devices at the end of the case study

7.2.5 Assessments appearing to disappear randomly from the eOAR

All the students raised the issue of completed assessments that mysteriously vanished from the eOAR (see Appendix 24). Mentors also reported this as an issue (figure 33). In contrast, only one tutor complained about this (Appendix 24). Many of the student assessments that were reported as 'lost' or 'deleted' were hidden because users did not know where to look for them. This section explains why students and mentors sometimes may erroneously believe that assessments have been lost.



Figure 33 Frequency that mentors reported 'lost' assessments hampered their ability to complete assessments on MyProgress

It was possible to deploy assessments to either mentors or students. I decided to distribute the assessments to the students. This was because placements frequently assigned mentors too late for the assessments to be sent to them; mentors could leave or change (e.g., if ill) during the student's placement. The eOAR was the student's assessment and stored evidence they needed to gain registration at the end of their degree. For this reason, historically, students had ownership of their practice records.

The students' mentors could choose to complete the assessments on either the tablet or the computer. The tablet was a remote input device for the cloud-based primary eOAR account. The objective was to ensure that all the completed assessments were stored in the cloud on the main student account. Completed assessments could be transferred from the tablet to the cloud, but not the other way around, i.e., from the computer/cloud to the tablet. Therefore, all assessments completed on a computer could only ever be viewed on the computer. Draft (modifiable) assessments completed on the tablet could not be viewed on the main cloud account via a computer until they were finalised, signed off by the mentor, and synced with the cloud. When a mentor signed off an assessment on a tablet without Wi-

Fi, the document was moved to an "outbox" and could no longer be edited. Once the student entered a Wi-Fi accessible area, the assessment was synced to the main "cloud" based account, removed from the tablet, and replaced with a blank form. Figure 34 below is a flow diagram of this procedure.

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Figure 34 Submission flow chart for MyProgress

Some students were unaware that assessments completed on a computer, whether in a draft or completed version, cannot be viewed on the tablet. They would look for the assessment on the tablet, see if it were blank and conclude that it was lost or deleted. In actuality, it was stored securely in the 'cloud' and accessible from any internet-connected computer. An excerpt from a discussion among students in focus group 2 demonstrates the confusion surrounding draft assessments.

S10 "If you save it as a draft on the computer, it won't always show up on the tablet? So, you've got a problem then, so you're doing the work on there, then you go to pick it up, say for example, when it's more appropriate to use your tablet and you can't."

S11 "Yeah."

S10 "Or you're at home, you think, right, I'm just gonna get ahead and get my action plan put on, and then you go to do it on your tablet with your mentor just to go through it, and you can't get into it without going back into the system.

S4 describes how students had thought assessments were lost but were found to be 'hiding'.

S4 "I feel I have to mention this, this hasn't happened to me, but there were some cases of people losing documents. A friend of mine had said she had an issue where her summative documents were sent but didn't seem to go through and she had to go back to placement later. So many people said they had similar problems saying, 'I think I've lost them,' when really, they had done something not correct, and it was there, it was just hiding."

The assessment appeared to be ' hiding' because the mentor had completed it on the tablet when Wi-Fi. was unavailable. The assessment would then be transferred from the 'assessments' or 'drafts' box to the 'outbox', where it would remain until the student 'synced' their tablet, at which point it would be transferred to the 'responses' box and uploaded to the 'cloud' (see figure 35 below). This is similar to how emails work when there is no internet

connection. A video of the assessment journey in MyProgress is available on YouTube at https://www.youtube.com/watch?v=J1OlheSXhRU .



Figure 35 Assessment 'hiding' in outbox

Occasionally, students did not seek assistance and attempted to retrieve 'missing' assessments independently. Several students deleted and reinstalled the MyProgress app on their tablets hoping this would resolve the issue. Unfortunately, removing the app deleted any saved drafts within the app, rendering them irretrievable. Students, mentors, and academics could not delete any 'signed off' assessments that were securely stored in the cloud account.

S3"There was something else that happened to me. Oh gosh, I spent ages on the learning contract and I saved it as a draft and then I couldn't get back into the app for love nor money, and I tried everything. I gave time, I shut everything down, I restarted the whole tablet so, in the end, I deleted the app, which is obviously the wrong idea, so I had to redo my learning contract, but it's these things you use to learn with, it's those little things that I couldn't find solutions for that I think were there, but then I think asking questions would have probably been useful at that stage."

Tutor 5 highlights another way students sometimes 'lost' their assessments.

T5 "We had one student where she had done everything, but there was no summative. But it was clear on her on her signed sheet of the list that came up that she had done it, but she'd emailed it somewhere. So, she'd emailed it to the mentor instead of synced it."

There was a blue options button on each assessment where the students could choose to 'email this assessment to your observer to complete later' (see figure 36 below).



Figure 36 Options for MyProgress completion

If this option was selected, the assessment was sent to the email address the student inputted. The assessment was then deleted from the student's MyProgress account. The mentor could access the assessment via an email link and complete the assessment (see figure 37 below). After completion and approval by the mentor, the assessment would be returned to the student's 'cloud' account.

The issue was that students did not realise they would no longer have access to the assessment on their account and mentors were unaware to look for the email. In addition, if the student entered an invalid email address, it became inaccessible. It would be sent to the email address the student used and only the owner of that email address could retrieve it.

myprogress@anglia.ac.uk

To: Shaw, Sian

20 March 2018 14:07

 To help protect your privacy, some content in this message has been blocked. If you're sure this message is from a trusted sender and you want to re-enable the blocked features, click here.

Dear sian Shaw,

You have agreed to provide feedback on Training Eightuu using Myprogress™. You can complete the 'M1207b Reflections on Formative Assessments' form by visiting <u>https://aru.mkmapps.com/myprogress//Responses/anonymousRespondQti21.aspx?id=a022b5af-cead-4526-b4eb-f8c998bf95df</u> in a web browser.

When prompted please enter the email address 'sian.shaw@anglia.ac.uk' to access the form. Any content you have previously provided will be included in the form automatically.

The deadline for this assessment is 31/01/18 10:12:00

If you experience any problems or require any assistance then please email myprogress@anglia.ac.uk. Regards, The Myprogress™ team – myprogress@anglia.ac.uk

--

Figure 37 Mentor MyProgress confirmation email of feedback completion

When students asked for help from the MyProgress support team at Anglia Ruskin, they were able to solve issues and retrieve assessments. T5 describes how the student's assessment thought 'lost' was retrieved.

T5 "The formative action plan, I was kind of panicking and then XXXX actually, I contacted him, and we got it back."

Occasionally, students or mentors accidentally deleted draft assessments. A red button labelled 'Abandon this completed assessment' permanently deleted draft assessments and reset the assessment to a blank state (see figure 36 above). Students would occasionally reopen a draft assessment; when saving it again, they may have decided not to save the modifications they had made. Some students and mentors in this situation selected the "abandon this completed assessment' option in the mistaken belief that it would return the assessment to its previous draft version; as a result, the draft assessment was deleted permanently. S7 describes how she encountered this issue. Sometimes, students did not comprehend their mistake and repeated it multiple times.

S7 "Sometimes things won't shut unless you cancel it completely when you don't always want to, but then there's not another option, so you end up losing something that you may have started and I know you can save stuff to the drafts as well, but I find, I can't even think what it is, but I know there's a certain, there's a certain thing, it's not that easy, not that easy to understand what you're supposed to do. Despite having training on it, I'm still like, not sure which one I press now, and I've lost work myself from pressing the wrong thing and then gone."

As I discovered problems with the app, I notified the software developers at MyKnowledgeMap so they could make the eOAR more intuitive and reduce the likelihood of user error. Consequently, as the app was refined and bugs were eliminated, the students experienced fewer issues.

S1 "It's just; I think they have got better. I think people are complaining a lot less about technical glitches and stuff like that."

7.2.6 Mentor digital literacy



Figure 38 mentor self-assessment of computer skill level. Cross-tabulation community and hospital-based mentors

Figure 38 above shows the mentor's self-rated computer skill level. Again, hospital mentors had a higher percentage of mentors rating their skill level as good or excellent than community mentors, 81.8% (n=27) vs 62.1% (n=18).

All the hospital mentors (n=34) and 86.2% (n=25) of the community mentors owned a smartphone.

There was widespread tablet ownership among mentors, with 79.3% (n=23) of community mentors and 87.9% (n=29) of hospital mentors owning at least one device. Overall, the most frequently owned platform was Apple/iOS, with 69.4% (n=43) of all users, Android 37.1% (n =23) and Microsoft 27.4% (n=17). A total of 45.2% (n=28) of mentors owned two devices on different platforms, such as Android and Apple/iOS, with 3.2% (n=2) owning devices on three different platforms (Android, Apple and Microsoft).

All the mentors in the community and hospitals used a computer at work. All the hospital mentors also use a computer at home compared with 93.1% (n=27) of community mentors.

The survey requested mentors rate their confidence in 24 digital skills. Figure 39 below provides a summary of the mentors' confidence. Some skills were those required to use the MyProgress app most efficiently to complete the students' assessment on the tablet, such as using speech to text, syncing the tablet and adjusting accessibility settings. Other skills were commonly used for social use, such as taking a photograph, completing online registration forms for shopping, using Facebook, Twitter and Snapchat and locating an app in the app store. Each skill was allocated points as follows.

- 3 = Never done this
- 2= Not confident
- 1= quite confident
- 0 = very confident.

Skills in which the mentors were least confident were awarded a three and the most confident a zero. The closer to three the score, the less confident mentors were in that skill. In general, the skills the mentors were least confident with were less likely to be needed for the social and personal use of a tablet; in contrast, the skills that mentors were most confident with were those most likely to be used for social media and personal activities.



Figure 39 Mentor rated mean confidence of digital skills

7.3 Hardware

Five of the students and all the tutors reported issues with hardware. The survey also revealed that mentors shared this concern. Mentors reported issues with a lack of available computers in placement areas, computers in public places, the browser not displaying MyProgress correctly at work or home, short battery life of the tablets and students losing or not bringing in their tablets (figure 40). Mentors were more likely to have issues completing the assessments on workplace computers than on their own home devices.



Figure 40 Mentor reported frequency of hardware issues (n=62)

7.3.1 Issues with the tablets.

Some students, mentors and tutors struggled to work with the tablets and preferred to complete the eOAR on a computer when available. They complained that the tablets' keyboards were too small. The provided ASUS tablets had 8-inch screens.
M41110989 "The tablet is too small to type a long document on. The computer is better."

T3 "One thing about the little iPad [tutor is referring to the Asus tablet as an iPad] is it is quite small and for some people, it might be nicer to have a slightly bigger face when you're doing things because it is tiny. I don't know whether the choice was because of the finance and how expensive they were, but something more like an iPad might be easier for an old git like me (laugh)."

T2 did not like the tablets and encouraged the students to follow his example and use the computers in placement to complete the eOAR.

T2 "They find the tablets small and difficult. I find them small. That's why I don't do things with the students on the tablet because of my eyesight and having to wear reading glasses. But I always use a big screen. And I tell them that when they say the tablets are small, sit down with your mentor at the desk or in the sister's office and go on their computer, go straight into MyProgress because then you don't have to sync it's already there. So, I always encourage them to use a bigger screen."

For S8, the preference for using the computer was due to issues with the tablet rather than the MyProgress app.

S8 "I struggled a lot to get on with the tablet. I had placements in XXX hospital and in the district, it was very hard because I didn't find that the tablet, it wasn't necessarily MyProgress that was going wrong, but the tablet was going wrong all the time. And in the district, cos I had to use the tablet, it lost a lot of my work. So, when I went back to the hospital, I've been using the computer; I find that much easier to use MyProgress on rather than the tablet." S9 also expressed a dislike for the tablet rather than the MyProgress app. However, an iOS user found completing it on his iPhone, which was smaller, more manageable.

S9 "I don't use the tablet because the interface for typing in the dialogue box is not user-friendly. It's difficult to switch between numbers and letters; the dialogue box expands when you type, but it makes it difficult to exit the dialogue box after typing; it's more difficult compared to iPhone, I found I had to really focus on the typing (looking at the keyboard, as it's bigger), to ensure I type correctly."

Not all mentors found completing the assessments on the tablet difficult. Nine mentors (14.5%) found it very easy and 21(33.9%) relatively easy: The same number of mentors, i.e., nine (14.5%), found it easy to complete the assessments on the computer and a slightly higher number, 27(43.5%), found it relatively easy. Four mentors (6.5%) found it very difficult to complete the eOAR on the tablet, while no mentors found it very difficult to complete the eOAR on a computer. Typing on the tablet was an area of challenge for mentors, with eleven (17.7%) finding it relatively hard and five very hard (8%) (figure 41).



Figure 41 Mentor ease of completing assessments

7.3.2 Tablet battery and processor.

All the student nurses were loaned an ASUS tablet to take to placement. The students experienced issues with poor battery life on these tablets. They also complained that the ASUS tablet processor was slow.

S10 "I think the biggest issue with me is like I said, I've got two different tablets; the one at home that I use is really quick and it keeps up with what I want to do, and this particular Asus tablet was just too slow, and it's just it's that slow time, sometimes when you're thinking, it takes three or four goes to absolutely make sure it's gone through."

One student highlighted the impact that the issues with short battery life and poor processing power were causing a barrier to the adoption of the eOAR

S4 "When you started implementing it, I felt there was a lot of frustration cos in my cohort, there was a lot of confusion between issues related to the hardware of the tablets. I felt that people couldn't get past the barriers with the tablets, such as poor battery life, the disappointing key e-PAD, the disappointing processor.

The tutors also identified issues with the tablet charging.

T3 "It kept running out of charge, so I had to be near a plug."

Some students who owned tablets preferred to use their own devices and encountered fewer issues.

S4 "I've got my own tablet. And quite often, whenever I had to use the tablet on My Progress, what I ended up doing, was just deleting from the one we got and using it on my tablet because it has a better processor, better keyboard and I was more familiar, I'm just using that."

Figure 40 above illustrates that many mentors did not have issues with the tablet's battery life, or when this occurred, it was infrequent.

7.3.3 Access to suitable computers and tablets in placement.

Experience of using computers in the clinical area was a mixed picture for mentors, with some finding a lack of available computers in placement and computers being in public areas as issues. More than half of the mentors did not encounter these issues or only encountered them once or twice (See figure 40 above).

The lack of access to a computer in the clinical area and students not bringing in their tablets were emphasised in the mentor's free-text comments.

M41319647 "It can be very time-consuming finding a spare computer or finding a private space where a computer is available. Students never bring the tablets in."

A lack of available computers in the clinical area was also identified as a barrier by students.

S4 "And you know, there were some barriers, because you didn't always have a computer when you needed it, at least in the beginning. But I found that really, that went by quite quickly."

As depicted in Figure 40 above, mentor concerns regarding students not bringing their tablets to complete assessments paralleled the experience with the PAD, which, as described in Section 5.4.2, students did not always bring to placement. Half of the mentors experienced this issue at least once. It should be noted that it is possible to complete or view the eOAR on any internet-connected computer when one is available; therefore, unlike the paper PAD, it was possible to complete the assessment even if the student did not bring in their tablet.

Figure 40 also illustrates a particular problem with the NHS computers identified in the mentors' survey. NHS computers sometimes ran using obsolete web browsers, notably internet explorer, which is no longer supported by Microsoft. Consequently, the MyProgress user interface did not display correctly on some NHS computers. Some mentors also encountered this issue on their home computers when they had not upgraded their browsers, though it occurred less frequently than in hospitals. When mentors encountered outdated web browsers working from home, it could be remedied by recommending a more recent platform, e.g., google chrome. Regular browser updates are essential for preventing virus infections. In placements, it was not possible to upgrade the browsers, as this was beyond the University's control. It was a complicated issue because mission-critical hospital systems such as biochemistry, X-Ray, and CT scanners occasionally ran on outdated browsers, so updating a browser could cause systems to fail, posing risks to patient safety. Occasionally, mentors could locate alternative computers in the workplace with more recent browsers.

Mentors who encountered issues with outdated web browsers in placement were advised to complete the assessment on the tablet provided by the University, which was independent of trust/placement IT systems.

7.3.4 Devices used to complete the practice assessment.

Analysis of MyProgress engagement data extracted from the administration account revealed that most students who used a mobile device to complete the eOAR preferred to use their own devices (figure 42).



Figure 42 Devices used by students to complete eOAR

The mentor survey revealed that of the 62 mentors who completed the survey, half (n=31) had completed some of the students' assessments on a mobile device used by the student (which could have been owned by Anglia Ruskin or the student). Forty-six mentors had used a computer at work. Six mentors reported using their computer/desktop at home. Some mentors had, therefore, used a combination of tablet and desktop computers.

7.4 Software

Several software issues caused students challenges. Some of these were inherent design features of the MyProgress app. Some were software issues that were challenging because of limited student, mentor, or tutor digital literacy. Others were a combination of both design and limited digital literacy interacting to create obstacles.

7.4.1 Authentication rule.

One issue was a 'authentication rule' which logged the students out of the app every thirty days and required them to log back in. This rule was a security feature built into the app by the developers. When this occurred, the software displayed a misleading error message 'Service ARU is not valid' or 'MyProgress has stopped working.' This caused the student to

believe that the app was broken. The student needed to be connected to Wi-Fi to log back on. If the student were in placement when the app automatically logged them out, they could not access their assessments until they were in a Wi-Fi accessible location. This misleading error message also led some students and mentors to assume incorrectly that they needed to be logged onto Wi-Fi to use the app.

Navigating around MyProgress and within the eOAR/assessments caused some mentors, students and tutors challenges. These difficulties correlated to two distinct areas, either the software design by MyKnowledgeMap or the design of the e-assessment /sequencing of the document by Anglia Ruskin University. Users of MyProgress found navigating the eOAR on the computer more straightforward than on a tablet device. Consequently, users preferred completing the eOAR on a computer (figure 44). Fourteen mentors did not use the app, compared to five who did not use the computer interface.

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S8 "And then another thing as well, I think after every thirty days it logs itself out on the tablet, so if you've not realised and you get to placement and its logged itself out, you cannot then log back in, and not everybody's got Wi-Fi at home either, so you can't log back in at home, so it makes it really difficult because you have to come into uni to log back in, I found that really irritating before."

S3 "It was the glitches at the start, just logging off randomly, which doesn't happen anymore."

T3 "The other thing is somehow, I think it was when our computers were updated, I lost connection to my progress completely and lost my password in everything, so I wasn't able to access it then until I got a new password, which didn't take long. Actually, it was sorted as soon as I'd identified that."

7.4.2 Navigation.

Navigating around MyProgress and within the eOAR/assessments caused challenges for some mentors, students and tutors. These difficulties correlated to two distinct areas, either the design of the software by MyKnowledgeMap or the design of the e-assessment /sequencing of the document by Anglia Ruskin University. Users of MyProgress found navigating the eOAR on the computer easier than on a tablet device (figure 43). Consequently, users preferred completing the eOAR on a computer (figure 40). Fourteen mentors did not use the app, compared to five who did not use the computer interface.



Figure 43 Mentor ease of navigation MyProgress

The activities which mentors found least problematic were setting up their mentor accounts and logging onto the student's account. Finding the student's assessments to complete was more difficult (figure 44).





7.4.3 Clicking back and forth.

One issue was a thirty-day 'authentication rule' which logged the students out of the app every thirty days and required them to log back in. This rule was a security feature built into the app by the developers. When this occurred, the software displayed a misleading error message 'Service ARU is not valid' or 'MyProgress has stopped working.' This caused the student to believe that the app was broken. The student needed to be connected to Wi-Fi to log back on. If the student were in placement when the app automatically logged them out, they could not access their assessments until they were in a Wi-Fi accessible location. This misleading error message also led some students and mentors to incorrectly assume that they needed to be logged onto Wi-Fi to use the app.

Navigating around MyProgress and within the eOAR/assessments caused some mentors, students and tutors challenges. These difficulties correlated to two distinct areas, either the software design by MyKnowledgeMap or the design of the e-assessment /sequencing of the document by Anglia Ruskin University. In general, users of MyProgress found navigating the eOAR on the computer more straightforward than on a tablet device. Consequently, users

preferred completing the eOAR on a computer to a tablet (figure 45), some mentors had used both a computer and tablet no mentors used a smartphone.



Figure 45 Device used by mentors to complete eOAR

A key aspect of the navigation featured in both focus groups and tutor interviews was the need to click in and out of assessments. MyProgress is designed with a main menu page, which provides access to all the assessments to complete; this can be seen in figure 47 below. However, if a user selects and opens one assessment to move to the following assessment, the user must click backwards to access this menu again and then select the next assessment. This felt illogical and what students and mentors wanted was to move on to the next assessment to complete without having to return to the main menu.



Figure 46 MyProgress assessment menu on the app

S7, who has dyslexia, found that the 'clicking back and forth' made it difficult for her to remember the question she was answering.

S7 "I don't know, because I think at least you've had it in front of you so you could answer, instead of trying to flick backwards and forwards, so because it was there you knew the right question you were answering whereas if you got to the end with the summery, then you can't remember what the first question was."

The tutors experienced similar issues to the students

T5 "The first time I used it, there're pages everywhere, and you have to click in one to come out to the other. So, I had a tablet and then computer. And it just feels it would be better if you could just look at the whole thing. But you can't; you have to come in and come out of each page, which is very time-consuming. So that was one of, that was the challenge for me."

Initially, the layout of the assessments on the eOAR was designed to be as close to the paper PAD as feasible. This may seem logical; in reality, constructing the digital document to match the paper version was unsuccessful. One student noticed the eOAR looks similar to the paper PAD she used in her first year at university, but the layout was not compatible with the app.

S3 "I suppose that the reason it may come across like this is because it's like the books, but on the tablet, and I suppose you don't want to change it too much to start with because we might all go 'what is that?' But I've never seen a layout like that where you do one document at a time. Usually, it's more on well on apps its usually it's cohesive thing; it's [the eOAR] quite a segregated."

One tutor advised that improved clarity in the layout of the sections of the eOAR was needed to make it accessible.

T3 "The thing is am sure you have done the best that you can do to make it very clear what sections we're looking at and I think that just comes with time after using it a couple of times I'm sure that I will just be able to click on that knowing this is this, this is that. And it's all about being clear, I think. The clearer that everything is and the more easily accessible, then the easier it is to use."

7.4.4 Regenerating forms.

When the assessment is completed on the tablet and synced to the main account in the 'cloud', it is replaced in the assessments folder by a new blank document, allowing a single form to be completed numerous times without multiple templates. However, these 'regenerating' forms confused some students and tutors.

T1 "the other bit that I've struggled with is that if you're not careful, if you don't do it systematically because the documents are regenerated each time, I think there should be key documents which shouldn't be [there] once the assessment is completed. Because what I've found a couple of times is if I'm not concentrating, I've probably gone in and done, or if I leave it and then come back to it, I've ended up going in and RAG rating the same students about three times."

Once the blank templates were completed, they could be deleted from the account so that the forms did not 'regenerate.' While some students and mentors were unaware of this function, S2 was cognisant of this feature and deleting completed forms helped her organise her assessments.

S2 "Well, I like the fact you can delete what you don't need and move them round. So, what I tend to do is, once I finish the form and submit it, I delete it from the main list so it, it's not there, so I know 'ok, it's done.' So, at the end meeting, I had like only three forms on there rather than the complete list and then thinking, 'oh have I done it already or not?"

Figure 47 below reveals that almost half of mentors identified that 'regenerating' forms hindered their ability to complete the assessments on MyProgress



Figure 47 Frequency of mentor issues with regenerating form

7.5 Governance: Tablet Storage and Data Protection

7.5.1 Tablet storage in placement.

A concern held by students was the safe storage of the tablets in the clinical areas.

S11 "When it's lying around, they always say, 'can you move that out of the way just in case somebody comes' I got told that quite a lot in this placement."

During the two years these students worked with MyProgress, no tablets were stolen. One tablet was left on a bus before the student commenced using it in placement, and another was dropped and broken. Anglia Ruskin University replaced both tablets at no cost to the students. Access to the MyProgress app is password-protected, so it would be difficult to access the data. It was also possible for the administrators to withdraw assessments from the device so they could not be read. Unlike losing paper documents with a lost tablet, completed assessments remained secure and accessible via any internet-connected computer.

7.5.2 Mentor access to MyProgress.

Mentors were emailed their username and password when completing a mentor registration form on the tablet using the student's account. The registration process linked the student to the mentor's account and registered their work email address. Mentors were required to complete a registration form for each student they mentored. Mentors who did not attend MyProgress training were not aware of this. Most mentors reported being hampered completing assessments on MyProgress because they could not recall or find their username or password (figure 49).



Figure 48 Mentor frequency that password recall hampered their ability to complete practice assessment on MyProgress

7.6 Chapter summary

Barriers to adopting the eOAR included the digital literacy of some mentors, students and academics, hardware, software and perceived tablet storage issues. Hardware issues included the lack of access to suitable computers in clinical placement away from public areas. Short battery life and slow processor speed hindered completing the assessments on

the Asus tablet. To address these issues for future cohorts, tablets of higher quality were loaned to students (Samsung Galaxy Tab 8 inch).

There were issues with the design of MyProgress that required software development by MyKnowledgeMap to improve usability and reduce user errors; this was a process of aligning the assessment to meet the needs and requirements of the users. Supporting mentors, academics, and students using the app prior to data collection made me aware of the issues. These software developments were released in upgraded versions of the app every two to three months throughout this case study. I redesigned the layout of the assessments, so there were improvements to the eOAR design between each of the four assessments the students took during the two years they used MyProgress. The enhancements aimed to increase accessibility and diminish confusion.

Most users preferred to complete the assessments on a computer when a suitable one was available. However, because of the limitations of computers in clinical areas, it is essential to have a system that functions without requiring access to trust computer systems. Although digital illiteracy was an issue for some users, there were also students, mentors, and faculty members who embraced the transition from paper to digital assessment. This study identified specific digital literacy skills that need addressing in order to use an app-based assessment with ease.

- Knowledge of how syncing functions and the assessment's journey from the tablet to the central cloud-based student record.
- Checking app versions and updating regularly.
- Using speech-to-text capabilities on mobile devices
- How to use predictive text effectively
- Adjusting accessibility settings

I resolved these issues through focussed user training, software development in collaboration with MyKnowlegeMap and increasing student, mentor and academic familiarity with the app over time, and providing better quality tablets to students, it became possible to identify how MyProgress was informing practice assessment. The process of change itself – moving from a paper system to digital was a theme that emerged from all users of the eOAR. This theme will be explored in chapter 8 alongside aspects of the eOAR, which legitimised it within the community of practice.

Chapter 8 Results: Legitimate practice in using the eOAR

8.1 Introduction to chapter

In chapters five through seven, the data identifying the issues with the paper PAD, the challenges in training the users to adopt the eOAR and the problems mentors, academics and students had with hardware, software and poor digital literacy were explored. The first section of this chapter examines the eOAR's journey toward legitimacy and how it became adopted by the community of practice. The latter portion of the chapter outlines what became regarded as legitimate practice in using the eOAR.

As evidence identifies that primary care and community health trusts have been more digitally advanced than hospitals for over a decade (Department of Health, 2016; Kings Fund 2016) data from community mentors is compared to that of hospital mentors to evaluate if there are any differences in the development of community legitimacy for the eOAR between these areas of practice.

As defined in section 2.2.4, legitimacy has a duality of meaning in this thesis; what is valid according to the NMC standards (regulatory legitimacy) and what the community of practice negotiated as legitimate (community legitimacy) in completing the practice assessment documents.

This Chapter addresses question four.

What aspects of electronic practice assessment are perceived as legitimate by academics, students and mentors? How can electronic practice assessment be made legitimate?

8.2 Change: The journey towards legitimacy within the nursing community of practice.

This section picks up theme five identified in chapter seven and explores the data concerning the change process and the barriers experienced in moving from a paper-based

assessment process to a digital one. The journey can be segmented into four stages: resistance, alignment, acceptance, and integration (figure 49). In all the participant groups, the users took different lengths of time to move through the stages and at the conclusion of this case study research, some were yet to reach acceptance and integration.



Figure 49 Stages of the journey to legitimacy of the eOAR

8.2.1 Resistance

The separation of university and placement marked this period of adoption. Students and mentors lacked an appreciation for the necessity of change. It was also characterised by significant resistance to innovation and a lack of understanding of the change value. As the project lead, I frequently felt like I was fighting alone against a tide of resistance.

I was instrumental in initiating and directing the adoption of the eOAR. Students reported mentors believed they had no say in the decision to use an eOAR and there was a lack of ownership within the hospital community of practice.

S4 "I think sometimes mentors felt like this was just placed on them. They weren't really consulted. I don't know how true that is, but that's the feeling I got. And they felt like a lack of ownership over it, that it was more an Anglia Ruskin's thing rather than something that can be integrated into the hospital community."

One tutor reported that when training the mentors on how to use the eOAR, the experience or voice of a single mentor could influence the opinion of the entire room towards the eOAR.

T4 "So when I go in and speak to them, I ask them if they've had any experience in this, and there's usually one person who said, 'I had a student....' and it was either good or bad, and that can influence the room."

There was a resistance to using the digital platform and a desire for paper copies. Some students, encouraged by mentors, were printing off paper copies. T4 reports how mentors completed the assessment on paper and then asked the students to type them up.

T4 "Just received feedback today from their tutor. I understand that a lot of them are printing off the documents and the mentors are filling them in, and the students are typing them up."

The mentors also reported that their initial experience using MyProgress was negative and preferred the paper assessment. Their initial experience, in many respects, was the least positive of all the stakeholders. Mentors often articulated how busy they were and how completing student assessments was an added stress; therefore, the process should be as straightforward as possible.

M41072132 "The role of mentor is one I enjoy and MyProgress took all that enjoyment away! I was frustrated at my lack of knowledge and found it hard to apply individualised feedback to individuals. I am very happy to move with the times and to use digital resources rather than pen and paper, but it was not a positive experience. I feel that students teaching mentors is perfectly acceptable, but please remember that students are working alongside us in often extremely busy workplaces with huge patient caseload demands on us. The mentor role is often adding a lot of pressure to the daily workload of a mentor, and it is essential that the system used to record student achievement and progress is easy to use and does not require a lot of new learning. The students I had when MyProgress first started struggled to make sense of it as much as I did. But it got easier with subsequent students."

Mentors were vocal about the desire to return to paper.

M41110989 "The paper version was better when it came to reviewing previous learning outcomes. I also liked the format more."

The eOAR needed to be developed to make it more user-friendly.

M41226109 "So much time wasted inputting repetitive information. Really difficult to navigate to the sections and assessments that you need to find. Even the titles are unclear. Repetitive scrolling and clicking through pages until you find the section you need. The student needed to be sitting with me, directing me where to go next and explaining what goes where. This does not show that my computer skills are inadequate. it shows that training and clear descriptions of what should be documented and where it is."

8.2.2 Alignment

Creating an assessment layout that worked for all the stakeholders required time and attention. In addition, it was learned that what works in a paper document does not necessarily work in its digital counterpart. Initially, the documents had been laid out in the same format as the paper PAD, which was not seen as logical in the digital version.

S4 "I think the main things are clearing up the forms to make it a bit more logical."

S4 describes one issue well-there were many opinions on how the eOAR should look and feel and getting it wrong acted as a barrier to adoption.

S4 "I'm sure, you know, if you asked five people what the forms should look like, you'll get six different answers. This is just kinda things I've noticed You've really got to look hard sometimes. Fair enough, you need to just sit down, know the forms really well. But it can put people off it's not exactly designed how people think it should be; it can act as a barrier for them."

Listening to the mentors, students and tutors and adapting the layout made the eOAR easier to use.

S10 "The thing that helps me actually, I know it was a change, I found it better when things were put together. Like when you have a student pledge all in one, rather than having the student pledge separately, and then you had your learning contract, a lot of condensing was done.

The tutors also identified that the forms needed to be made more intuitive.

T5 "In terms of monitoring, I am sure that the team, if you keep upgrading and revising to make sure that the forms are actually being utilised efficiently and more user-friendly as well."

Giving some ownership to the students, incorporating flexibility into the eOAR and finding a middle ground were appreciated and reduced student opposition. While the eOAR remained digital, the option to upload some files, e.g., service user feedback as a Microsoft Word or PDF document, into the record was provided as an alternative to completing this form online.

S4 "Yeah, I think I mentioned some of them, for example, being more flexible; because at first, it was very much, understandably so in terms of the purpose to this, was to cut back on paper, not use any paper at all. And so, I feel there was a bit of resistance with people were wanting to maybe say, 'can we have a paper version of this and this?' Cause you are opening a bit of Pandora's box potentially. How far do you go down? Do you get to the point where you can use the electronic system, but there's also a complete paper version of it? That kind of nullifies the point of this. But I think slowly over time as we started adding more flexibility with the paper feedback forms,"

8.2.3 Acceptance

The eOAR was acknowledged as a valid instrument because of its continued development, training and expanded usage.

S1 "Yes, it has got better like things have got easier to use."

S2 "and I think because we've more experience with it."

S4. "And the more mentors you have, the more experiences, you learn more of a system."

T2 recounts how the familiarity of working with the paper PADs made them seem more straightforward; once he started working with MyProgress and recognised the added value, he grew to view it as a better system.

T2 "We're used to working with books. I wouldn't see them much easier now that I'm using the system, but at that time, they seemed a much easier option. Maybe that's because not understanding everything that MyProgress offers. Now that I know everything it offers, I see it as a better system, especially for us as tutors." One student articulated it could be more challenging for mentors who had used the paper version of the PAD for a long time to embrace the eOAR. However, the barrier could be overcome if they gained experience and understood how simple the eOAR was to use and similar it was to the PAD.

S3 "And it depends on how they've been mentoring as well. If people have been using that book for a long time, it's difficult to get them to go across, but I think once they get used to it and see how simple it is, and how similar it is that's got that barrier out the way."

Some tutors had students in later cohorts who also transferred from the PAD to the eOAR in the course's second year. T1 describes how fewer issues arose when this new group started using MyProgress.

T1 "What's quite nice when I compare having had students who are now third years, who are the ones who started with the digital, a few of them were kind of, no, no, no I don't want to do it. Whereas when the second year came, when they were first years, I was telling and from the outset that this is the only year that will be a paper, next year you're moving to digital. So, the majority of the issues that I had to address are now third years in respect to them being unhappy, that didn't arise as much with the second years."

T2 summarises this stage well. Many of the initial issues had been ironed out and the use of the platform became more widespread the negativity began to reduce.

T2 "So I think it's a good system and I think as it's used more the negativity will stop."

8.2.4 Integration

The final phase saw a shift in the perspective of some students in which they integrated the eOAR into their professional practice and ways of working. They articulated how using a digital platform was logical and beneficial in a modern NHS. The NHS is adopting digital work methods, such as recording patient observations and records, so an electronic system mirrors professional practice. The students identified that as digital working increases, mentors would find completing the assessment on the tablets easier.

S5 "I think they'll get better with it because now we're doing the e-obs. [clinical observations such as blood pressure, pulse and respiratory rate] on the little iPads, I think everyone's having to get their head around that. I think they'll get better with using tablets."

Both S4 and S5 discussed teething issues with the eOAR but were able to recognise how working digitally aligned with their healthcare careers and made positive comments regarding MyProgress.

S4 "And I really want to stress I do like MyProgress overall. I think it's definitely a good idea; it's going forward with it. It just I feel like I also have to mention these teething problems."

Some students abandoned the tablet by ARU and use their own devices, finding them more accessible because of familiarity.

S4 "I've got my own tablet. and often, whenever I had to use the tablet on My Progress, what I ended up doing, was just deleting from the one we got and using it on my tablet because it has a better processor, better keyboard and I was more familiar, I'm just using that."

After examining the path toward the legitimacy of the eOAR, the remainder of this chapter explores what mentors, students and academics regard as legitimate practices in using the eOAR. Five themes emerged: assessment and feedback, mentor continuing professional

development, accessibility, governance and employability (figure 50). Each of these themes will be explored.



Figure 50 Legitimate practice in use of an eOAR

8.3 Assessment and feedback

The data concerning the quality of formative and summative assessment feedback, the use of the digital platform and how the eOAR altered the legitimate practice that existed with the PAD to improve practices in assessment feedback is noteworthy.

8.3.1 Assessment and feedback mentors

The Mentors were asked how much time they spent with the student completing their practice assessment on the eOAR. Table 11 demonstrates that community mentors spent

more time with students completing the eOAR than hospital mentors. A total of 45.5% (n=15) of hospital mentors and 37.9% (n=11) of community mentors spent 1 hour less completing the assessment. Of most concern, one hospital mentor completed the eOAR alone without the student present. There is no guidance from the NMC regarding how long a mentor is required to spend providing feedback and the time taken varies widely.

Time mentors reported spending completing the eOAR. Placement area – community or hospital based cross tabulation.	Placement Area Total					
	Community		Hospital			
	No	%	No	%	No	%
None completed the assessment independent from the student	0	0	1	3	1	1.6
Fewer than 30 minutes	0	0	4	12.1	4	6.5
30 minutes to 1 hour	11	37.9	10	30.3	21	33.9
2-4 hours	16	55.2	15	45.5	31	50
5-7 hours	0	0	2	6.1	2	3.2
8-10 hours	1	3.4	1	3	2	3.2
More than 10 hours	1	3.4	0	0	1	1.6
Total	29	100	33	100	62	100

Table 11 Contingency table showing the relationship between mentor location and the time mentors reported spending completing the eOAR.

A small minority of mentors in both community and hospital settings reported spending considerably longer on completing the assessment, 8-10 hours and some over 10 hours. These were a specific category of mentors called 'sign-off mentors'. The NMC requires sign-off mentors to meet with students weekly for one hour during their final placement. These mentors certify students' eligibility to join the NMC register as registered nurses. They are often senior-level nurses with extensive experience.

A crosstabulation revealed that four of the five mentors who took five hours or longer to complete the eOAR were sign-off mentors (table 12)

Contingency table showing the relationship between Mentor Role (Mentor/Sign off Mentor) and the time taken to complete MyProgress									
Time taken to comple assessment	te	None Completed the eOAR independent from the student	Fewer than 30 mins	30 mins - 1 hour	2-4 hrs	5-7 hrs	8- 10 hrs	Mor e tha n 10 hrs	
Are you a sign off mentor and completed sign off documentation?	yes	0	1	10	10	2	1	1	25
	no	1	2	9	19	0	1	0	32
Total		1	3	19	29	2	2	1	57

Table 12 Contingency table showing the relationship between Mentor Role (Mentor/Sign off Mentor) and the time taken to complete MyProgress.]

To provide a comparison, the mentors were asked how long it took to complete the PAD before implementing the eOAR. Figure 51 illustrates that the time required to complete the eOAR was equivalent to the time required to complete the PAD, with the eOAR taking fractionally longer.



Figure 51 Time mentors reported completing the PAD compared with the e-OAR in one placement

Despite the descriptive statistics providing evidence of minimal variation, based on the mentor's reported memory of the time taken to complete the eOAR compared to the PAD, a different narrative came from the mentor's qualitative data. Initially, the eOAR took some mentors longer to complete and they were upset about the increased workload. The mentor below summarises the perspective of the mentors.

M41365045 "Using MyProgress is not time efficient. Working in a busy NHS environment, time is valuable and having 'protected' time to carry out the necessary meetings and assessments with students is virtually impossible. The system is not easy to use or intuitive and often, you find yourself repeating information or needing to type in boxes just to get a 100% completed assessment. This is time-consuming and a little irritating."

Another mentor highlighted the task took longer for those mentors with limited digital literacy.

M41365045 "MyProgress has increased the workload of any mentor by the length of time it

takes to complete an assessment. If you have poor IT skills, it will take longer and that is not possible on our clinical area."

Being unfamiliar with the eOAR was one reason it took longer to complete.

M41295203 "Takes longer than paper as I am not familiar with it."

Not all mentors considered the eOAR required more time to complete than the PAD, but they still provided criticism that the layout was unclear. For example, one mentor mentioned she missed the colour-coding in the PAD. While the text in the eOAR was identical to that in the PAD because it was copied over, something about the digital assessment, perhaps the digital language or unfamiliar layout, made it confusing for mentors to complete.

M41212905 "It does not take any longer to complete the assessments via the book or online, however, the layout is unclear/colouring misleading and poor English."

As the mentors gained experience in using the eOAR, it became more straightforward to complete.

M41067932 "I am aware of how difficult it can be to implement change in a workplace, and this was a very challenging one but when I left my last post, I was getting to grips with it more with each student who came along."

Some students agreed that completing the eOAR did not take mentors too long.

S10 "And also another advantage for the mentor was that, when you're actually using the screen, it was quite quick putting it all in,

and that wasn't too bad, I think, from the time perspective."

While the mentor descriptive statistics indicated that the PAD and the eOAR took comparable amounts of time to complete, students stated that how mentors completed the assessment was markedly different. With the PAD, the mentors took the student's assessment and completed it unilaterally. Students reported that when using the eOAR, mentors were required to spend more time with them, providing feedback and focusing more on the student and the assessment. The following discussion from the second focus group illustrates how students reached a consensus that this was one advantage of using the eOAR.

S7" I think the advantages of the technology though, by doing it either on computer or tablet or whatever, is that, then your mentor actually has to make time for you to do that with you."

S7 "Whereas when it's a book."

S5 "They just take it away."

S7 "They just can kinda be doing that throughout their shift without paying much attention to what they're doing, whereas they can't do that [with the eOAR] and that is the bonus of it."

S7 "They actually have to sit down with you and do it with you."

S10 "They have to book time out with you, they have to take that hour or so with you, for that face-to-face and going through everything."

S7 "I think for me was just the fact that it gave us allocated proper time that was definitely a positive, that you didn't always get before."

The student data above demonstrates that the eOAR encouraged mentors to take time out for discussion and feedback with their students, which is conducive to excellent assessment practice.

Tutor 4 concurred with the students' perception that with the PAD, the mentors were not taking time to complete it correctly and the eOAR encouraged them to spend more time with students to provide feedback.

T4 "I think we assume that mentors were completing the PAD correctly. So, I think the reality is, in practice, they don't sit down with the students. So, because they're not sitting down with the students, this (eOAR) is taking them longer; it's forcing them to stop and do it."

S1 describes a positive experience of receiving feedback from her mentor. Being obliged to complete the assessment digitally motivated her mentor to leave the ward and devote quality time to reviewing the student's progress. The disruption the eOAR caused generated a positive response from the mentor.

S1 "My only thing, I suppose, having my last mentor and her not really being able to get her head around it being online so quickly was her being like, 'oh I just don't want to sit in this room being on computers anymore, let's go for a walk' and that was not something that normally mentors do. Normally, you're jammed in your quick space, but her being like 'we're just gonna go for a walk' and we went on a lovely walk together and we spoke about loads of placement stuff, loads of just nice things. I felt that helped us get somewhere, which I don't know; maybe if I had a book and she had her head around it more, she would've just been able to scrawl whatever she wanted. So, it gave a bit more time to things." The survey data confirms that most mentors agreed or strongly agreed that using MyProgress required them to spend extra time with students to complete their practice assessment (Figure 53).

Mentors using the PAD had been completing it 'on the hoof' whenever they had a moment between caring for patients. However, almost half the mentors (45% n=28) acknowledged that using the eOAR made it more difficult for them to do so; they needed to commit sufficient time to the students. (Figure 53).

Although S7 indicated that using the eOAR increased the time she spent receiving feedback from her mentor, the quality of the written remarks was not as high.

S7 "Yeah. I found that when they were filling it in, my comments are pathetic. They are like a couple of sentences, if that, maybe one sentence, whereas when my handwritten ones, people were writing paragraphs and giving me good feedback."

With the PAD, students could not complete any self-assessment documentation in their book before meeting with mentors. This is because, with handwriting, the documentation could not be amended or corrected readily if the mentor disagreed with the student. Some students began taking more ownership of their practice assessment, recording their self-assessed achievements against the NMC requirements before meeting with their mentors. S7 tells how she assumed responsibility for completing her eOAR.

S7 "I think with me going in with half the stuff done already on the tablet kind of made it impossible for them to say, 'I'd prefer to use the computer.' The only reason last time we had to use the computer was because I had three mentors; two went off sick. I mean it was the last day and the mentor decided to do it and it was easier for us to just sit at the computer and get it done before she went home at 3 o'clock. So that was the reason, but yeah, I think I've been the reason that we've used the tablet so much in my experience."

Impact of eOAR on practice assessment showing the relatonship between mentor location and level of agreement that using and eOAR compared with PAD (percentage and number):

1. Mentors need to take more time to sit down with the student to complete the assessment

2. The eOAR is harder to complete on the 'hoof'

3. Mentors are able to gain access to the student recored eariler



Figure 52 Level of agreement of impact of eOAR. Mentors located in community (n=29) compared with mentors located in hospitals (n=33)

In community placement locations, 62.1% of mentors (n=23) Strongly agreed or agreed that the eOAR enabled them to gain access to the students' assessment earlier. This contrasts with only 36.4% (n=12) of mentors in hospital assignments (see figure 52 above).

Sign-off mentors were required to review students' ongoing achievement records for the 3year course. With the PAD, the student would be required to hand all their paperwork to the sign-off mentor. Occasionally, sign-off mentors had to wait weeks or months for the students to bring in their documents and then carry them around and keep them safe. With the eOAR, sign-off mentors could immediately access the student's entire record via their MyProgress account from any internet-connected computer. As with regular mentors, there was a notable difference in the degree to which the community and hospital mentors agreed that using MyProgress enabled them to gain access to the student's practice records earlier in their sign-off placements.Within the group of sign-off community mentors, 62.1% (n=18) strongly agreed or agreed that using MyProgress enabled them to access the student record earlier. In comparison, only 36.4% (n=12) of hospital mentors agreed or strongly agreed with this assertion.

(Table 13).

Sign-off mentors' level of agreement that using		Placement Area				Total	
MyProgress enables them to gain access to the student's practice record earlier in their sign off	Community		Hospital				
hospital sign-off mentors	No	%	No	%	No	%	
Strongly agree	0	0	2	6.1	2	3.2	
Agree	18	62.1	10	30.3	28	45.2	
Neutral	5	17.2	14	42.4	19	30.6	
Disagree	3	10.3	7	21.2	10	16.1	
Strongly disagree	3	10.3	0	0	3	4.8	
Total	29	100	33	100	62	100	

Table 13 Contingency table showing the relationship between mentor location and sign-off mentor level of agreement that MyProgress enables them to gain access to the student's practice record earlier

Some mentors noted students do not prepare for feedback meetings in placement.

M41146397 "I find most students don't prepare their documents prior to their placement, no difference whether it's paper or electronic."

Each mentors had a MyProgress account linked to the accounts of students they supported during placement. On this account, the mentor could track their students' progress in completing the eOAR without requiring students to provide access to their documentation. It is interesting to note that the community mentors, on average, rated the ability to track student progress in placement using the eOAR slightly higher than hospital mentors. (Table 14).

Checking/tracking student progress using eOAR *		Placement Area				Total	
Placement area- community or hospital-based Cross-tabulation	Community		Hospital				
	No	%	No	%	No	%	
Excellent	5	17.2	5	15.1	10	16.1	
Good	12	41.4	10	30.3	22	35.5	
Satisfactory	6	20.7	6	18.2	12	19.4	
Adequate	3	10.3	6	18.2	9	14.5	
Unsatisfactory	3	10.3	6	18.2	9	14.5	
Total	29	100	33	100	62	100	

Table 14 Contingency table showing the relationship between mentor location and Mentor rating of the eOAR as a tool to track students' progress.

8.3.2 Quality of mentor feedback.

This section commences with some contextual information describing how the quality of practice learning was monitored and supported at ARU prior to implementing the eOAR and how the eOAR became integrated into the process. To ensure effective communication between Anglia Ruskin University with clinical placement areas, each trust/organisation is supported by an Education Champion assisted by a team of link tutors from the faculty. The Education Champion and link team are composed of qualified NMC registered nurses who are part of the university faculty. All nursing lecturers and senior lecturers are assigned to one of the link teams. The Education Champions coordinate an educational audit process to ensure that placement areas fulfil specified requirements and co-chair a Practice Education Committee (PEC) with the education leads from the placement organisation every two months. These meetings follow a standard agenda and include a review of student and mentor evaluations and external reviews such as the Care Quality Commission (CQC).

T1 described his role as an Education Champion.

T1 "As an education champion, I also end up justifying [the ePAD]. The role of an education champion is that you are the main link between the university and the trust. The trusts which provide the student placements. So, you are responsible for organising link visits and visiting students in clinical areas.

You are also responsible for the audits and if issues arise with students and mentors in practice. You play a key role in going in and helping the clinical areas both the mentor and also the student to address the issues."

On the agenda of the PEC is a discussion regarding the quality of feedback provided by mentors to students. Following the summative assessment, the tutors evaluated the quality of the feedback provided to each student by their mentors. The tutors completed a Red/Amber/Green (RAG) rating form for each PAD on paper. The tutors sent the RAG forms via internal mail to the placement administrators. The administrators collated the information for each placement organisation on a spreadsheet. The spreadsheet was also forwarded to the Education Champion, who reviewed it as a standard PEC agenda item. If the quality of
feedback one mentor provided was identified as Red or Amber on the summary form, it was not possible to review the actual PAD or go through the feedback they had provided because the sole paper copy of the PAD belonged to the student.

The process was digitised as part of the eOAR, with the RAG review being incorporated as an additional form. In the second version of the eOAR onwards, the academics in this case study used the digital RAG form (Year 2, Placement 2). This form was stored on the tutor's MyProgress account and was not viewable by students. The forms are automatically linked to the account of the Education Champion and could be extracted as a single spreadsheet and sorted into placement areas by the administrators. With the PAD, the audit could only evaluate the quality of the feedback for a single placement (one ward, one clinic, one community setting) for a single student. With the eOAR, it is possible to track the quality of placement over time and the quality of individual placement areas, e.g., ward or entire organisation, e.g., hospital. It was also possible to track the quality of feedback from an individual mentor over time. The Education Champion could access the student eOAR should they wish to review it at the PEC or with an individual mentor.

Analysis of the mentor survey revealed that the additional functionality that the eOAR provided over the PAD to complete, save and disseminate information was being recognised by some mentors. Again, the community mentors recognised the improvement that MyProgress added to the PECs more than hospital mentors (figure 54).



Figure 53 Mentor level of agreements three questions about the impact of the eOAR showing the relationship between mentor location and level of agreement

8.3.3 Assessment and feedback tutors.

The interview data showed tutors prepared differently for placement tutorials with students using the eOAR. With the PAD, students would bring the document to the university to discuss with their tutor at a summative tutorial and ideally before this at a formative tutorial. Frequently, the first time the tutor would see their students' practice assessments would be during this summative tutorial. The tutor would review the assessment in the meeting and discuss the student's progress.

T3 discussed how using the eOAR; she could prepare for the summative assessment tutorial in advance. This allowed her to focus the discussion on the individual student's needs.

T3 "So with the student because I had completed most things, I could have done, the day before; I think mainly it was a conversation about their experience in practice and if there was an issue with any part of it, then we would focus on that. Say if they'd forgotten something they hadn't done, then I would focus on that bit. Alternatively, if there was a bit that was highlighted that maybe was an issue, then we'd discuss that bit."

A significant distinction between the PAD and the eOAR was that with the digital record, tutors could examine the placement progress of all their students in real-time from any internet-connected computer. This allowed tutors to provide enhanced support, communication and feedback. T1 explains how the eOAR improved her ability to track student placement progress, review formative assessments and provide enhanced support.

T1 "I went in and looked at my students' records initially within the first couple of weeks to make sure. So, I started at the end of week one into week two to see whether the mentors had completed all the essential registration forms, which would be the mentor details, the induction learning contract, the beginnings of student pledges. So, I reassured myself that the students were being supported because sometimes some students are quite good and saying I don't have a mentor this is going on. But then there are others who are quiet and don't tell you that there is a problem. So, what I was doing is I was going into the assessment document and just checking for every student to make sure that that's been completed. And then I was either sending the students groups emails or telling them in the class to say please can you make sure that you have completed all the relevant information that you need to complete.

So, the engagement is kind of instant. Once I go in and have a look, I can read it; I can keep very much up to date with what my students are doing, especially somebody who regularly writes reflective accounts. I can see the progress that they're making and if they're syncing their documents, I can see how they're navigating their way through the cluster skills."

T2 commented that the eOAR facilitated better interaction with not only students but also mentors.

T2 "I also sometimes get emails from the mentor or have some communication from the mentors through MyProgress, which I'm able to receive."

Later in the interview, T2 elaborated on how the eOAR enabled him to monitor student progress and provide timely help during the placement. He provided support and feedback without requiring the student to visit the university campus or the tutor to travel to the student's placement.

T2 "If you said to the whole class, my class of 24 say, can you bring in your books when you are in next Thursday two thirds would bring them in. Now I don't need that. I go on to a system and follow them any time. If any student phones me up saying I am having problems in the clinical area, I can then go on to MyProgress and see what comments have been made. And judging by their comments, compared to what the student is saying, maybe they're worrying too much, and I can make them feel better, or maybe they're not worrying enough and I need to get in touch with them. I think they still get the comments the same and the mentor still grades them. One advantage is students don't need to bring their books in, in the middle of the practice because they say, oh, there's something you know my mentor has written this, I'm worried about it. They just need to e-mail me say I have a comment by my mentor I'm worried about in the formative. And I just look at the formative on MyProgress and I say oh, don't worry, I see what they mean, you know, it's made communication much easier between me and the students.

Additionally, the students observed that with the eOAR, they were receiving more feedback from their tutors than they had with the PAD. Some tutors used the eOAR to provide positive feedback to students during their placements, which the students greatly appreciated.

S2 "I think we got overall more feedback. Cos, I received a few emails from a tutor saying, 'Oh well done' or something which was quite nice halfway [through placement] rather than having to wait until submission."

8.3.4 Breach of academic regulations.

One tutor had a student who refused to sync their tablet because they failed to progress in practice and did not want to submit their assessments. The tutor reported this to the Director of Studies. A student who refused to sync their summative assessments was managed as if they had not submitted the paper PAD, so they should receive a fail. If a student's performance on placement was cause for concern, mentors were instructed to complete the reporting form via the computer interface to ensure the paperwork was forwarded straight to the Personal Tutor and Education Champion upon completion. This way, the eOAR can ensure that students experiencing difficulty receive timely assistance.

T1 "But my other challenge I found is that I have one particular student who's been using the tablet and now we've reached a point where this student, with several other issues that happened within his clinical area. It's now been taken by the Director of Studies study, but he has refused to sync [the eOAR]. So, we are now in a position where even the mentor can't address the issues. We can't talk through some of the stuff because the student has refused to sync his documents."

8.4 Mentor continuing professional development (CPD).

8.4.1 Revalidation

It is a regulatory requirement of the NMC (2021) that all qualified nurses maintain a portfolio of evidence of CPD, practice-related feedback and reflection and submit evidence of this for revalidation every three years to renew their registration. In the community, 68.9% (n=20) of Mentors identified the eOAR as an excellent or good tool for recording evidence for revalidation, compared with only 42.3% (n=14) of hospital mentors (figure 55).



Figure 54 Mentor rated level of satisfaction with the eOAR as a tool for keeping evidence for revalidation and triannual review

Looking ahead to when they qualified, students identified the eOAR could help support their revalidation.

S7 "Yeah, because we're all gonna have to do revalidation, now every three years, and I know from talking to nurses that are doing it at the moment there's some nice templates and everything on the computers and stuff to work to so it's a good basis for kind of, starting your work along those lines and getting used to it."

8.4.2 Tri-annual review

The standards to support learning and assessment in practice (NMC, 2008) required that mentors undergo a tri-annual review process to verify that they had mentored at least two students within the preceding three years and engaged in CPD in their role as a mentor. Mentors were required to complete the review process to remain on the mentor register. With the PAD, mentors did not have a record of the individuals they mentored and their judgements. In the training sessions I provided on the eOAR, both prior to implementing the eOAR and during the case study, mentors informed me they frequently reviewed the shift rota over three years to identify students they had supported to provide evidence for their triannual review. This caused difficulties in obtaining CPD evidence. However, because the mentors had a unique eOAR account with copies of the practice assessment documentation they completed, they had evidence of their activity as a mentor. In the community, 62.1 (n=18)% of mentors, compared with 42.4% (n=14) of hospital mentors, found the eOAR an excellent or good tool to provide evidence to support their tri-annual review (see figure 55 above).

In the community, 62.1% (n=18) of mentors compared with 42.4% (n=14) of hospital mentors found the eOAR an excellent or good tool to provide evidence to support their triannual review (see figure 60 above).

8.4.3 General continuing professional development

In the community, 52.5% (n=18) mentors strongly agreed or agreed that using MyProgress provided them with useful evidence for CPD compared with only 34.5% (n=10) of community mentors (Figure 56).



Figure 55 Mentor agreement that using MyProgress provides them with useful evidence of CPD

8.5 Accessibility



Accessibilty Features of eOAR

Figure 56 Mentor rated of usefulness of eOAR accessibility features, community mentors compared with hospital mentors.

Three of the students who participated in the research had dyslexia. Two students, S4 and S8, discussed how MyProgress made practice assessment more accessible. S4 was initially reluctant to use the eOAR, but as her familiarity with the platform grew, she discovered that it enhanced her learning.

S4 "When I first started using the platform, I was adamant that it wouldn't be useful or functional for me. However, around the second or third week of my placement, I began to get really interested in the platform. You'll find in the copy of MyProgress where I have used the space to write extensively in the reflection space (using referencing) to reflect and validate the work I have done. I have encouraged my mentor to do the same. Any meeting we have held, I have written up; she has gone through, and I've found it useful to check for understanding.

I have dyspraxia, ADHD and OCPD, to be able to talk about how it can be a useful tool to have a comprehensive assessment that is more fair- I feel the MyProgress platform does this well as it gives both the student a space to mentally expand, and the mentor space to create achievable goals for me."

S4 found the spellcheck and ability to correct drafts particularly helpful.

S4 "I saw a lot of the benefits, I saw the ability to save drafts early, to go back and change things if things were different, the ability to spell check (which I really like as a student who has dyslexia)."

S8 found that some features of the eOAR helped her organise her work. She also found using speech-to-text on the tablet helpful.

S8 "Well I like the fact you can delete what you don't need and move them round. So, what I tend to do is, once I finished the form and submitted it, I delete it from the main list so it, it's not there, so I know 'ok, it's done.' So, at the end meeting, I had like only three forms on there rather than the whole list and then thinking, 'oh have I done it already or not?"

S8 "I use speech to text which was really good. I found it really good quality in typing and it's easy to correct it. but I discovered this speech to text on my last placement and it was really, really good for some people, just press talk 'oh wow, it does say that."

S2 did not identify that she had any additional learning needs but worked with a mentor for whom English was not their first language and found that using the eOAR made it easier for her mentor to complete the assessment.

S2 "I think my last mentor struggled a little bit with spelling, she kind of went in-between her language and English. And me in-between Polish and English. So, we kind of sat and corrected at the end, which helps."

In contrast, S7, who also had dyslexia, found working with the tablet difficult but could complete the assessment using the computer interface.

S7 "I'm dyslexic as well, and I found it quite difficult to use just for the fact I can't flick backwards and forwards like I can in a book, so, if I'm trying to remember some information, by the time I've found it on the tablet I forgot what I was going for in the first place, so I have found that element of it quite difficult. And on my last placement, we didn't use the tablets at all; we just completed it on the computer, which I felt was easier, and my mentors felt was easier as well."

Mentors reported finding the spellcheck on the eOAR a helpful feature; community mentors more so than hospital mentors (figure 57 above).

One mentor discovered that having a digital version of the practice assessment made it easier to read.

M41212905 "There is no confusion with handwriting now, spellings can be checked and things are easier to read."

Not all mentors recognised the accessibility benefits of MyProgress and that some students (and mentors) may have additional learning needs that might be helped by using digital assessment. One mentor was disparaging of relying on computers and spell checkers.

M41399559 "Preparation is possible with a handwritten document as much as it is with a typed document. Encouraging people to become reliant on the spell checker and typewritten documents mean that individuals' vocabulary and basic English skills will not be utilised as much and will over time diminish."

Most tablets have accessibility features which can be found and adjusted under the settings menu. For example, on the ASUS tablet, it was possible to modify the font size, font style, contrast and screen brightness and the ability to activate 'speech to text' and 'text to speech function.' In the survey, mentors were asked about the utility of both the ability to modify the eOAR's background colour and the speech-to-text capabilities. With over half of the mentors unable to comment on either of these features of the tablet, it raises the question about mentors' awareness of tablet accessibility technologies and how they might serve students and mentors with additional learning requirements.

The free-text comments in the mentor survey verified some mentors were unaware of the accessibility features.

M41319647 "Did not know speech to text was an option. I can see that this would improve the experience."

Another accessibility feature that mentors could not comment on was speech-to-text, with 62.1% (n=18) of the community and 51.4% (n=17) of hospital mentors unable to comment on its usefulness (figure 57).

Mentors perceived their usefulness more positively for more commonly used digital features that enhance accessibility, such as the ability to edit/change/delete assessments. Again, community mentors were more positive in their assessments of the usefulness of the ability to edit assessments, with 86.3% (n=25) viewing it as extremely or very useful compared with 60.6% (n=20) of community mentors (figure 57 above). The majority of mentors in both the community and hospital found the ability to type assessments rather than handwrite them a useful feature of the eOAR (figure 57 above).

8.6 Governance

Appendix 25 summarises how frequently different governance issues were raised by academics and students during their interviews and focus groups. The themes that arose regarding how the eOAR enhanced governance of practice assessment and governance concerns are covered in the following section.

8.6.1 Prevention of falsification of documentation.

Preventing falsification of documentation, particularly students being able to submit practice assessments without being verified by their mentors, was essential for the validity of the practice documentation. Therefore, its security features were a key reason for choosing the MyProgress platform. To prevent falsification of documentation, mentors were required to sign off every assessment with their work email address. On inputting the email address, a copy of the completed assessment was emailed to the mentor's work email account, along with a notification that they had completed the assessment. Simultaneously the assessment became accessible via their mentor's MyProgress account. If a student attempted to use the mentor's email address had been used to verify an assessment. The students were informed of the security features during training to use the eOAR and that using a mentor's email address was equivalent to forging their signature. It should be highlighted that the security features of MyProgress were presented at the course approval event and complied with the NMC's standards.

When mentors attended training, they were informed about the eOAR security features. As over fifty per cent of mentors did not attend training, the data revealed that some were concerned about the possibility of cheating. M 41226109 "There is NO way of preventing fraud; you are relying on mentors too much. Students can go in and write/"sign" things off under their mentor's name. They can change/edit entries as they wish. It is very insecure."

There were a couple of occasions when the University was made aware of students using their mentor's email to sign off assessments. The mentors contacted the University reporting that they had received an erroneous email notifying them they had completed an assessment. At this point, mentors would perceive the platform as insecure and that students could falsify their assessments. In reality, the security feature had functioned flawlessly. The University was notified of a student falsifying documentation and the Director of Studies followed up on the matter as per the University's disciplinary procedure.

The mentor below highlights many mentors did not understand the eOAR's security features.

M4136504 "I have had students sign off documents for me without me being present as they know my email address. Luckily, it was not an assessment, but there is a potential for that to happen. I think there needs to be a password to be entered to be able to sign an assessment."

Using a password would be less secure since the student may learn it as the mentor types it. The survey data revealed that the community mentors were more confident in the eOAR's ability to prevent falsification of documentation than the hospital mentors. Of the community mentors, 68.9% (n=20) rated the ability of the eOAR to avoid falsification as excellent or good compared with 45.5% (n=15) of the hospital mentors (figure 58 below).

Another concern of mentors was the ability of students to edit assessments. Students could modify assessments while they were in draft format. Once a mentor verified the assessment as complete, it was locked down. It was no longer editable by anyone (apart from three members of the MyProgress administration team at the University). Some lengthy assessments were saved as drafts since they were completed over the course of multiple meetings with the student's mentor. Mentors were advised of this and told that if their

feedback had been saved as a draft, they must read it in its entirety before signing the documentation as complete to ensure that the student had not altered the assessment. This was an area of concern for some mentors.

M4114639 "I also think it is potentially more prone to falsification of documentation than the previous booklet. It is because the assessment is located in the student's account, and both student and mentor work on them together; it's ok for the ones that can be completed in one session (cluster skills, interpersonal professional profiles, etc.), but it's less secure with the ones needing to save as draft during the placement (learning contract and action plan), as students have access to it between sessions and can potentially change some of the already typed content."

While the concerns raised by the mentor above are valid, not allowing the students access to write in their eOAR reduces their engagement with the assessment and their ability to set their own goals and record/document their achievements concerning those goals.

8.6.2 Security of the platform

The eOAR was created using the MyProgress app hosted on the Microsoft Azure Cloud platform. The data governance office checked security certificates at ARU prior to purchasing the platform.

Some mentors raised concerns about the security of the data storage.

M41072132 "My concerns about everything being stored electronically is the risk of it being lost. No system can be thought of as 100% safe these days!"

The community mentors had more confidence in the security of the assessment storage than the hospital mentors. Among the community, 79.3% (n=23) of mentors rated the security of assessment storage as excellent or as good, compared with only 36.4% (n=12) of hospital mentors (figure 57).



Figure 57 Mentor rated level of satisfaction with the ability of the eOAR to prevent falsification of documentation and to provide secure storage of students' practice assessments. Community mentors compared with hospital mentors. Another concern of mentors was the ability of students to edit assessments. Students could change assessments while they were in draft format. Once a mentor verified the assessment as complete, it was locked down. It was no longer editable by anyone (apart from three members of the MyProgress administration team at the University). Some lengthy assessments were saved as drafts since they were completed over the course of multiple meetings with the student's mentor. Mentors were advised of this and told that if their feedback had been saved as a draft, they must read it in its entirety before signing the documentation as complete to ensure that the student had not altered the assessment. This was an area of concern for some mentors.

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8.6.3 'Tatty' assessments

An area of quality and governance raised by the tutors was the poor state of the PAD on submission (see 5.4.1). However, under half of the mentors viewed the eOAR as less 'tatty' than its paper predecessor. (See table 15 below).

Mentor agreement that the eOAR is less 'tatty' than the PAD	Placement Area			Total		
	Community		Hospital			
	No	%	No	%	No	%
Strongly agree	5	17.2	1	3	6	9.7
Agree	12	41.4	15	45.5	27	43.5
Neutral	8	27.6	13	39.4	21	33.9
Disagree	3	10.3	2	6.1	5	8.1///
Strongly disagree	0	0	1	3	1	1.6
Not applicable / did not use	1	3.5	1	3	2	3.2
Total	29	100	33	100	62	100

Table 15 Contingency table showing the relationship between mentor location and level of agreement thatMyProgress is less 'tatty' than the paper assessment

8.6.4 Document storage

T1 highlighted the improved storage and record-keeping afforded by a digital system, mainly if it were ever necessary to follow up a student on an NMC fitness to practice enquiry.

T1 "The other issue really is the fact that I would hope that if it's digital that you can always access the information, even at the end once the student has left. Because the other bit I do is NMC fitness to practice and every so often, you might hear services saying the student, who's now qualified, isn't fit for purpose. So, at least now, at university, we can go back to the whole document because I'm sure it'll be in storage somewhere and we will have access to it. So, I think for those reasons, I think it's really good."

8.6.5 Vulnerable patients

Governance concerns surrounded the use of tablets in clinical areas with vulnerable patients, those treated in secure mental health units.

T1 discusses the unique concerns associated with bringing tablets into a mental health secure unit and how these concerns were resolved.

T1 "The issues with those types of services are because they are secure services where you have people who sometimes have been diverted from the criminal justice system. So, they will be people with criminal histories and, therefore, the risk of allowing digital equipment of any sort. So even staff members, before going on to the ward areas, have to leave mobile phones in the car. No mobile phones. Nothing that can - because you have a risk of working with a variety of different offenders. So, say, for example, some people that are within those services are sex offenders. So, therefore, there has to be a real limit as to what potential digital access they may have."

R "How have you overcome that?"

T1 "We have overcome that with using the education champion process and the link tutors. So, knowing that those specific services function in that way. The education champion and link tutors went in and had a conversation with clinical areas to look at how viable it would be for our students to be assessed in those areas using electronic methods of assessment. And it was agreed that they would have specific computers within the unit, within the wards that they could utilise. So, the students couldn't bring their tablet in, but that could be done on the computer system."

S2 identified an alternative solution to completing assessments in secure mental health units. While the students were not permitted to take tablets into the wards, they could leave their tablets in the lockers in the staff area outside the locked units. The students completed their assessments on their tablets in the staff room away from the ward area.

S2 "I think part of it might be to do with what kind of service you're in. I know people who went to medium secure services. They couldn't bring tablets into the ward, so they would have to use a computer or do it outside. My last placement had more staff than computers, so it was easier to do it on the tablet, but previously I used computers because it was more convenient for the mentor, so it's actually kind of negotiating what is better at that point of time."

8.7 Employability

Some students identified employability skills they had gained from using the eOAR. These included enhanced digital literacy, increased confidence/autonomy, leadership reflection and teaching skills. Students and academics recognised the importance of digital literacy for future nursing careers.

S4 "But now, having done it for three years, I think it has its flaws, but it's the right direction to go in. It makes sense with the way things are going with healthcare today with electronic systems. For us to go in the same direction."

T5 "I realised it was a good innovation because we are moving from manual to digital technology, and wherever we teach or work with students everywhere now, digital technology is part of our skills that we need to master."

Because of the limited comprehension mentors had of the eOAR, students became increasingly autonomous in completing their practice assessment.

S4 "I think it's had to make me a bit more autonomous because a slight issue we found is because it was being brought across so many students in such a short time, not everyone was able to have the training that they needed. All the students did, but all the mentors, all the members of staff who were mentors. It's a massive task to do cos you're training everyone in a massive hospital how to use this system. And I really feel like I had to get on top of my stuff, knowing how to access the different areas, what needed to be done at what time, what to do if something went wrong, and I think in MyProgress, that experience encouraged me just to get familiar with the software, get familiar with it on my own terms so I can help teach the staff and other members who used it, and even, you know, younger students who didn't have as much experience with it."

As part of the first cohort to use the eOAR, students were able to acquire digital skills that they envisaged would be valuable for future job applications.

S3 "I imagine in an interview as well because most people are probably gonna be using these tablets in the future, aren't they? Saying that, 'well yeah, I was using these as a pilot and we know how to use them and one day I'll be a mentor, and I can sort of take the lead on that, and I could do that. I think that

would be quite a good selling point to anyone when you go into, so yeah, I think that's what it's going to do for me."

S1 "It's a nice thing to put on my cv that I'm experienced training in the electronic assessment system."

Student two discussed how reflective and writing skills developed using the eOAR translated into increased confidence in working as part of the interdisciplinary team.

S2, Because we were writing reflections and things, and I think it helps to build upon writing patients notes and everything, the more we write, the more we are confident about it. Yeah, and confidence in talking to people in different capacities, managers, or Health Education England students, patients when you explain what we ask them to do. It gives you that bit of confidence in talking."

Student four was confident with the technology and enjoyed the opportunity to develop their teaching skills by demonstrating how to use the app to mentors.

S4 "Definitely the teaching aspect of it. I love technology myself so, I'm afraid I can't say that I learned a lot more about using, you know, eLearning programmes because I love them, anyway. I do a lot of them outside Anglia Ruskin just to supplement my own learning.

Students who had volunteered to be 'Digital Scholars' identified specific benefits of the role.

S2 "And being a digital scholar, I think it will open up an avenue for us to talk to people, to go places, like Birmingham, where we delivered speeches, I think it helped my overall confidence and feeling yeah, we can do it."

8.8 Chapter summary

The journey to achieving legitimacy of the eOAR comprised four stages: resistance, alignment, acceptance and, integration. At the conclusion of this case study, the road to legitimacy has brought the eOAR closer to the centre of legitimate practice, but it was not quite there yet. The journey was a rocky road. I questioned if it were justifiable to drive the practice community in a specific direction, given that they were averse to so much disruption, despite the possible benefits that could result.

Completing the eOAR took about the same time as the PAD. How mentors completed the assessment, however, differed. With introducing the digital platform, the assessment process became more collaborative between student and mentor. Students felt mentors provided higher-quality feedback. Communication between students and their tutors improved whilst they were in placement, as did the communication between academics and mentors. In adopting an eOAR, alongside digital literacy skills, the students developed leadership skills, particularly the digital scholars. The eOAR offered accessibility features which supported students with additional learning needs. Mentors could identify the benefits of the electronic records for their revalidation with NMC and triennial review.

The assessment process was also transformed for academics; reviewing the students' eOARs prior to the tutorial allowed them to focus on specific students' needs/development rather than completing the documentation. In addition, there was increased interconnectivity, through the app, between the students and personal tutors.

The improved interconnectivity and quality of the assessment process positively impacted engagement with formative assessment and contributed to a reduction in student attrition; this will be explored in chapter 9.

Chapter 9 Impact of the eOAR

9.1 Introduction

Having presented the findings regarding the issues with the paper PAD (chapter 5), stakeholder training in using the MyProgress App (chapter 6), challenges in using the app (chapter 7) and the journey towards legitimacy of the eOAR in the community of practice (chapter 8) this final results chapter evaluates the data analytics from MyProgress to investigate the impact of the eOAR on practice assessment and answers question five.

What, if any, benefits can an electronic ongoing achievement record offer the community of nursing practice?

9.2 Course outline

Figure 59 below outlines the BSc Nursing Hons course schedule for years two and three, which the students in this case study followed. The students undertook two primary placements in the second year of their course and three in their third year. The eOAR contained the same assessments as the PAD and the same number of parts. During a course approval event, the proficiency statements and core skills assessed in the PAD had been validated for use by the NMC, so they could not be amended without reapproval. The layout of the document, however, was changed.

At the start of the placement, the students were deployed the relevant induction, formative and summative documents to their eOAR. Resubmission documents were only sent to the accounts of students who required them. Students were expected to submit documents electronically in three main groups.

- 1. Induction documentation (to be completed in the first week of placement)
- 2. Formative assessment (to be completed at the mid-point of placement)
- 3. Summative assessment (to be completed at the end of placement)

The mentors' details were also collected at the start of placement using the eOAR to ensure that the student had been assigned a suitably qualified mentor to support them.



Figure 58 Outline of eOAR submission included in the case study

All the assessments below were submitted via the eOAR for each placement part. There were two parts in each year of the course, so four sets of these documents were submitted by each student within this case study. The assessments highlighted in red below were the summative assessments required to meet the NMC (2008) regulatory requirements (figure 60). The remaining documents evidence student progression and achievement to support the summative assessment

Induction - First week of placement

- >Mentor Registration First 3 days of placements
- >Induction meeting with clinical staff first day of
 - placement attendance
- First formal meeting with mentor within 3 days of first placement attendance
- Learning contract First week of placement
- Student Pledge First week of placement

Formative - Mid point of placement

- ≻Views of service users
- >Student's reflections on views of service users
- ≻2nd Formal meeting with mentor
- Formative assessment of interpersonal and professional skills profile
- >Formative assessment of performance critieria
- >Action plan for formative assessment
- >Ongoing progress comments relates to action poaldn

Summative Assessment - End of placement

- >NMC Cluster Skills
 - Performance criteria care, compassion and communication
 - •Performance criteria organisational aspects of care
- •Performance criteria infection prevention and control
- •Performance criteria nutrition and fluid management
- Performance criteria medicines management
- >Interpersonal and professional skills profile
- Student reflections on interpersonal and professional skills summative assessment
- Mentor summary of summative assessment
- Cause for concern form (only if required)
- >Personal tutor's review of summative assessment part
- Sign off Documentation (3rd year only)

Figure 59 Submission of documents via the eOAR by study participants in each part.

Each of the two-practice modules (six and eight) was 30 credits and fine graded using an adaptation of Steinaker and Bell's (1979) taxonomy of experiential learning (Appendix 26). Students were expected to achieve a higher level of competency each successive year, aiming to practice appropriate skills autonomously by the end of year 3 in preparation for their role as a registered nurse; this corresponded to grade four (Internalisation).

9.3 Impact 1: Completing assessments on time

9.3.1 Submission of assessments for year 2, Part 1.

With the paper PAD, there was no scheduled tutorial to check on student progress and formative feedback from the personal tutor was inconsistent. It was challenging for the tutors to undertake a formative review of the PAD when the students were out on placement. The tutors suspected that mentors and students did not complete formative assessments on time and reported this as the case in the qualitative interviews. However, it was difficult to ascertain if this was true.

Using paper-based assessment documents, the students submitted the summative practice assessment the week after the conclusion of the placement. During this week, the students would present the PAD during a tutorial with their personal tutor. With a tutor group of up to 30 students, tutors could not see all their students on the same day and different tutors would have varying availability during the week. Consequently, some students were required to submit their assessment on Monday, while for others, it could be as late as Friday.

9.3.2 Year two, part one formative submissions using the eOAR

The students in this case study began using the eOAR for the first time during their 11-week placement on 8th February 2016, with a summative submission date of the week commencing 25th April (see figure 58). In MyProgress, the engagement tool identifies the weeks of the year by the rank order in which they occur; so, week one will commence on 1st January 2016, week two on 8th January and so on.

On the completion of part one of module six, when students should have submitted all assessment documents via the eOAR (including induction, formative and summative

assessments), engagement data was extracted from MyProgress data analytics to assess the timelines with which induction and formative assessments were submitted. In the initial configuration of the eOAR on the MyProgress platform, the deadline for the summative submission was displayed on each form. In accordance with ARU academic regulations (Anglia Ruskin University, 2020), there were no formal consequences for late submission or non-submission of formative assessments.

The extracted data commenced on week six (the first week of February 2016), one week before the placement began and concluded on week 18 or 29th April, the end of the week in which the summative practice assessments were due to be submitted. For the first submission of the eOAR, the same process was followed as for the PAD, with the students meeting with their tutor to discuss their progress in practice.

Formative assessments should be completed on or around the mid-point of placement, which in year two-part one would have been week 12 of the calendar year or the week beginning 21st March. Table 16 below outlines the submission data for the formative assessments at the end of module six, part one. The total number of students in the cohort using MyProgress was n=157.

Assessment details	Expected formative submission date	Total number submitted by end of placement	Missing submissions	
Mentor Registration	W/C 8 th Feb 2016	128	29	
Induction meeting	W/C 8 th Feb 2016	130	27	
First formal meeting with mentor	W/C 8 th Feb 2016	116	41	
Formative mentor summary	W/C 21st March 2016	105	52	
Action Plan	W/C 21 st March 2016	94	63	

Table 16 Induction documents and formative assessment submission data for year two part one

On the deadline for the summative submission, there were a fair number of incomplete induction and formative documents. The largest number of missing submissions was 63

(40%) of the action plans. This corroborates the qualitative narrative from the tutors, which identified that action plans were the most likely to remain uncompleted (5.4.4).

Figure 61 below demonstrates that many induction documents and formative assessments were completed late. It was found that 21 students (13.4%) submitted their formative assessment within two weeks of the summative assessment due date, five (3.2%) after the summative assessment due date and 52 (33%) students failed to submit their formative assessments at all. Some mentor registration and induction documents, first formal meetings with mentors and action plans continued to be completed and submitted up to and beyond the summative assessment due date. These findings are consistent with those of Burden (2014), who also found that student practice assessment is not conducted in accordance with the course and NMC requirements. With an eOAR, it is much easier and quicker to audit completions and adherence to regulatory requirements; this supported a positive clinical learning and assessment experience.



Figure 60 Submission of induction documents and formative assessment year two, part one (module 6)

9.3.3 Year three, parts one and two (module eight): Formative submissions.

Engagement data from MyProgress were analysed to see whether enabling automatic alerts on the eOAR assessments and notifying mentors and students when formative assessments were due and late increased the percentage of formative assessments completed on time. The data for year three, part one prior to the activation of the alert, was compared to year three, part two after the alerts were activated. Year three, part one commenced on 13th February 2017, with summative submission due in the week commencing 24th April 2017. This was a nine-week placement, so the formative assessment was due for submission in week five (around 20th March 2017). Part two of the third year commenced on 2nd May 2017 and concluded on 21st July 2017. This was an extended 11-week placement. The formative assessment was due during week six of the placement, the week commencing 5th June 2017.



Figure 61 Comparison of submission of formative assessments between year three parts 1 and 2

A total of 142 students commenced year three. Figure 62 above demonstrates a significant increase in the number of students who submitted their formative assignments on time (before or at the midpoint of placement) in part two (101/71.1%) compared with part one (29/20.4%). There were fewer moderately late assessments in part 2 (18/12.7%) than in part one (45/32%). Formative assignments were considered moderately late if they were

submitted after the midpoint of the placement but more than two weeks before the summative assessment. This criterion was selected because the guidance in the eOAR from the RN course leader stipulated that all formative assessments be submitted more than two weeks before the summative. Formative assessments were, therefore, considered very late if submitted less than two weeks before the summative due date. In part one, 56 (39.4%) students submitted the formative assessment very late or after the summative due date; this decreased to eight students (5.6%) after the automated alerts were activated in part two. In part one, 12 students failed to submit their formative assessments. This number dropped to zero in part two after the automatic alerts were activated.

9.3.4 Year three, parts one and two (Module 8): Summative assessments

In year three, part one and prior to this, students had a submission deadline date for summative assessment, but the app allowed submission beyond the due date. Historically, a similar process had happened with the paper PAD, there was a deadline date, but personal tutors breached academic regulations (ARU, 2020) by allowing students to return to practice and complete incomplete formative and summative assessments after the deadline. Late submission of summative practice assessment of the PAD had caused issues for mentors who were required to complete documentation for students who had left their placement area, as well as the Course Leader who is tasked with overseeing student progression.

In year three, part two, a lock and submission alert were introduced to the summative assessment on the eOAR. This meant that all the students were required to submit their summative assessments on the due date and time or formally request an extension from a student advisor. After the due date, the eOAR was locked and would no longer accept submissions without an approved extension. Alerts were also added, reminding students of the approaching due date for the summative submission.

In part one, prior to the summative assessment being locked to submissions after the due date, 45/31.7% of students submitted their summative practice assessments late with four non-submissions. Following the hard deadline in part two, the number of late submissions (with extensions) decreased to 19/13.4% and there were no non-submissions (figure 63).



Figure 62 Week of summative submission, year three, parts 1 and 2. Late submission of assessments

The late submission of practice assessments was corroborated in the tutor interviews. T3 articulated the tutors' action if a student failed to submit the assessments on time. Historically, when a tutor observed that the student had not completed a formative or summative assessment by the end of the placement, the tutor requested that the student return to the placement area to complete all the documentation. This is why so many formative and summative submissions were late. The tutor would then sign off (tick) the RAG (red, amber, green) quality rating form that all the assessments had been completed on time, even if they were not.

T3 "Some of the, I don't know what you call them, parts sections hadn't been completed. So, I waited until the next day and I think we have something to do with them being downloaded I don't know. But then the next day some of them still weren't completed and so I had to go back to them."

R "Was this for the formative or summative?"

T3 "Formative and summative, yeah."

R" So what kinds of things hadn't they completed?

T3 "So cluster skills generally are completed."

R "Formative reflections?"

T3 "Maybe some of the reflections may not have been."

R "Service user feedback?"

T3 "Some things like that may not have been completed. So, there were bits that still needed."

R "And what did you do about that?"

T3 "I got them to go and complete them and then let me know when they completed them, so I could go back in and just tick them off."

R "Was that different at all from your experience of using the paper document?"

T3 "A little bit, yeah. I found that, with this, actually in fairness to be almost, maybe not, because sometimes there were things that were not completed like, tended to be things like service user, and like and interprofessional feedback, or things that didn't have an immediate impact. The things that always were completed tended to be the cluster skills and the summative feedback and all that kind of stuff. All that tended to be done."
T5 also discussed how she requested the students return to placement to complete missing assessments. T5 explains she would only do this if the missing assessment were discovered in the submission week. After the submission week, the tutor said she would ask the student to request an extension. The problem with this approach is that it breaches the University academic regulations (ARU, 2020); requests for short-term extensions must be submitted to the student advisor before the deadline and are for a maximum of ten working days. Some of the assessments were submitted beyond the short-term extension deadline. As a result, the student advisors are unlikely to have granted these extensions.

T5 "Well, if it is still within the assessment week, so it has not been completed or wrongly being signed sometimes. whatever. so did actually occasionally I also need to speak to the mentor, or I call the student okay I will speak with my mentor. Okay, when are you going to see your mentor? I will be here until 16:00. Why can't you do it now, for example, and they came back with a completed form, basically. But if it is still within the assessment week, I try to understand. However, it is more than that; after that week, then I ask them to get an extension."

Completing the formative assessments close to or at the same time as the summative (or in some circumstances after the summative assessments) was pedagogically unsound since the student did not have the opportunity to learn from the feedback provided and develop their skills and knowledge. It served only as a box-ticking exercise. Academics sending students back to placement to get their assessments completed after the submission date appeared to be legitimate practice and went 'under the radar, as there was no way of tracking completion dates. Accuracy depended on trusting the dates inserted into the PAD by the mentor and agreed upon by the personal tutor. With the eOAR, all the assessments had an electronic date and time stamp, so the frequency of late submissions became evident. MyProgress automatically timestamps each assessment on the date it was completed rather than the date it was submitted. So, if a student completes an assessment but delays submission, it will still be identified as completed on time.

In the focus group discussion, the students revealed how the deadlines and alerts on the eOAR encouraged their mentors to complete their assessments on time. The students wanted to complete their formative on time but found it difficult to challenge their mentors.

S1 describes how the eOAR overdue reminders helped her complete the assessments on time.

S1 "I said to my mentor when I first came to this placement about the dates that everything needs to be done, she was like 'you're not one who, yeah, I hope you're not like, pressured by dates and hand in things?' and I was like 'oh no I'm pretty chilled, but this system is really, it will give me red flashing lights, or we have to, or you have to help me with the red flashing lights' sort of thing. So yes, I think it helps that there is that rather than just a book and I don't know, I suppose people don't take the book as like seriously as like an electronic thing. I bet mentors take them home or gets coffee spilt on them; do you know what I mean?"

S1 postulated that having a digital assessment encouraged mentors to take the assessment more seriously than the paper record; however, few mentors agreed with this assertion (see figure 64 below). S1 used the eOAR to persuade her mentor to complete the documents within the eOAR without being perceived as a student who pressures mentors to meet deadlines. This benefits students who would otherwise have been hesitant to pressure their mentor.

Figure 64 demonstrates that the mentors corroborated the MyProgress analytics and students' accounts presented above. Half of the mentors agreed or strongly agreed that using MyProgress increased their likelihood of registering their details and recording and completing the induction documents on time in the first week of placement. A total of 44% of the mentors strongly agreed or agreed that using MyProgress meant they were more likely to complete and record the formative assessment on time. Also, over 50% of the mentors either strongly agreed or agreed that using MyProgress meant that all the assessment elements were more likely to be completed fully than in the PAD.



Mentor level of agreement that using MyProgress they are more likely to 1. Take completeing assessments more seriously as it is a digal record.

Figure 63 Mentor rated level of agreement that using MyProgress improves four aspects of assessment completion

9.4 Impact 2: Bridging the theory-practice divide

9.4.1 The tablet as a pedagogic tool

Providing each student with a tablet device gave them access to a pedagogic tool in a placement that could be used for various other educational benefits. These additional uses include storing notes, accessing professional apps, conducting internet searches, recording reflections, watching instructional videos and photographing learning artefacts. The mentors were asked to rate the tablet's usefulness for each of these six educational features. The data around the pedagogic value of the tablets emerged predominantly from the mentors in practice.

For all six pedagogic features, the community mentors consistently rated the tablet's usefulness higher than the hospital mentors (see table 17 below). The ability to record reflections and online search was considered the most valuable overall.

Some students also discussed the usefulness of the eOAR for recording reflections in the focus groups.

S8 "I really like the reflections on it. I've written quite a few reflections and that's going to help me in future for my portfolio and I've got it all there in one place and they're there, I'm not gonna lose them. So, I really like that."

One tutor used the reflective accounts completed by students to engage them in a discussion via the eOAR.

T1 "I think that a good thing is that you can actually interact with the student. So, every so often my students will do reflective accounts and I will comment on bits of the reflective account."*

Pedagogic uses of tablet	Extremel	y Useful	Very useful Moderately useful		ely useful	Slightly useful		Not at all useful		
	Community Mentors (n=29)									
	%	no	%	no	%	no	%	no	%	No
Recording reflections	17.2	5	55.2	16	6.9	2	0		20.7	6
Internet searching	20.7	6	48.3	14	6.9	2	6.9	2	17.2	5
Storing educational/professional resources	10.3	3	44.8	13	13.8	4	10.3	3	20.7	6
Using professional apps e.g., BNF, Resus Guidance	13.8	4	48.3	14	13.8	4	3.5	1	20.7	6
Watching educational videos	20.7	6	34.5	10	17.2	5	6.9	2	20.7	6
Recording photographic record of learning artifacts	17.2	5	34.5	10	20.7	6	6.9	2	20.7	6
	Hospital Mentors (n=33)									
	%	no	%	no	%	no	%	no	%	no
Recording reflections	3	1	27.3	9	36.4	12	15.2	5	18.1	6
Internet searching	6.1	2	27.3	9	30.3	10	12.1	4	24.2	8
Storing educational/professional resources	6.1	2	33.3	11	33.3	11	3	1	24.2	8
Using professional apps e.g., BNF, Resus Guidance	6.1	2	21.2	7	39.4	13	3	1	30.3	10
Watching educational videos	3	1	27.3	9	33.3	11	6.1	2	30.3	10
Recording photographic record of learning artifacts	3	1	30.3	10	27.3	9	15.1	5	24.2	8

Table 17 Comparison of mentor rated usefulness of six pedagogic features of the digital tablet based on mentor location

The data above in table 17 indicates that a sizeable proportion of mentor respondents recognised the potential of the tablet as a pedagogic tool, while between one-quarter and one-fifth of respondents consistently did not appear to see the t's potential as a teaching resource. As they were still building confidence with the devices, probably, some mentors had not yet considered the tablets' other applications. One mentor articulates this view.

M41072133 "I'm sure that the t could be used for all these events but as yet I have not considered using them but as with all things digital, the continued use of the devices and resources will allow us to develop confidence in what we can get them to do. It is all about ease and speed of use in the workplace and must be student led. The mentors often have too many calls on their time to be the ones who lead the investigations into what the tablet can do."

As with all digital transformations, some users disliked the technology on offer and refused to test innovations.

M41146397 "I have not used any of those features as I refuse to use the tablet due to its user unfriendly and inefficient typing interface."

9.4.2 Improving communication between academics, mentors and students

Several features of the t facilitated improved communication between mentors, academics and students. One of these features was the t's portability, rated as excellent or good by 79. 3 % (n=23) of community mentors and 69.7% (n=23) of hospital mentors.

The portability and convenience of the t for recording assessment was also recognised by students and academics.

S9 "So I thought it was like a really good idea to have that and to not have to lug around that book all the time."

T5 "The fact that you know, it is safer it is very quick you've got this equipment here, and you don't have to worry about in books it's all online."

A majority of community mentors (60%) agreed or strongly agreed with the statement that the eOAR made it easier to access the students' assessments from previous placements. This was in contrast with the hospital mentors, where only 37% of mentors agreed or strongly agreed with these statements (figure 65).



Figure 64 Mentor agreement that the eOAR makes it easier to access students' assessments from previous placements

Some mentors found it challenging to review students' assessments because the assessment formatting and navigation within the app required refinement to make them both more accessible and streamlined.

M41146397 "Also it's more difficult to check assessments from previous placement, as each assessment (cluster skills, interpersonal professional profile, learning contract, actions plans, etc) is a separate document, so I had to keep going back and forth (or to print them all out) to read them properly."

M41365045 "It gets very confusing when all the assessments for past placements appear on the students account. Could they be split up into sections to make it easier and less daunting?"

Some mentors did not know how to use the platform.

M41606715 "I am unsure of how to track student progress."

The key to navigating MyProgress and tracking the student's progress was practice and familiarity with using the platform.

M41072132 "Once I had navigated the mysteries of logging in and finding the appropriate section, usually guided or set up by the student initially, the actual boxes of each section were relatively easy, though I found the tablet fiddly and less user friendly than doing the compiling of records on a pc."

Throughout the case study, feedback from students, mentors, and academics was analysed, and the assessment layout was modified to meet problems identified by users. The App developer, MyKnowledgeMap, also acted on the feedback. Throughout the two years of the case study, there were regular app updates with navigational enhancements (See fig 13, section 3.8.5).

As mentors gained familiarity with the MyProgress platform, they became more positive about it.

M41263400 "Thank you for introducing this wonderful and amazing system. If familiar with the system, it's a great technology. Well done."

On balance, more mentors agreed or strongly agreed than disagreed or strongly disagreed that the eOAR made it easier to communicate progress with the student's tutor at the

university. Again, community mentors were patently more positive than hospital mentors (figure 66). The level of agreement is disappointing, given the app's potential to improve communication; however, it is early in the implementation of the eOAR and this may improve as users become more familiar with the platform.



Figure 65 Mentor rated agreement that using the eOAR makes it easier to communicate student progress with the student's personal tutor at the university. Community mentors compared with hospital mentors

9.5 Impact 3: Environmental benefits.

Introducing the eOAR shifted the assessment of practice to a paperless process. Previously, the students received a paper PAD each year, which were substantial document. In addition, ten pages from the PAD needed to be photocopied to be kept in the students' records. Both tutors and mentors identified the environmental benefits of going paperless.

T1 "I think that the biggest benefit for me is the environment, really."

R" What do you mean by that?"

TI "The environment because at the moment if you look at how big the books are. The previous books that the student had, they were in excess of probably 76 or 86 pages. So, each student having that sort of printed out, by the end they had one book per year."

Figure 66 below demonstrates that there was greater parity between the hospital and community mentors' rating of the t's environmental value than in rating its usefulness as a pedagogic tool.



Figure 66 Mentor rated environmental benefits of the eOAR

9.6 Impact 4: Impact on student nurse retention.

Maximising retention is vital for ARU for the following three key reasons: It is important for our students to progress effectively through their degrees and complete their courses successfully this ensures the best possible springboard for a successful transition into graduate employment or further study. Retention is a key metric in the Teaching Excellence Framework (TEF). High retention levels allow the University to manage its resources and plan more effectively. An audit of data from Astra, the ARU student management system, demonstrates a marked reduction in student nurse attrition since introducing the eOAR. The faculty data management officer extracted the data from Astra for evaluation.

Table 18 below shows the ongoing marked reduction in the percentage attrition of Adult Nurses at Anglia Ruskin University since introducing the eOAR. Attrition was defined as students who did not complete their BSc Nursing course within the standard period of 3 years. It should be noted for those that did not complete within the standard timeframe (for various reasons, e.g., academic, health, pregnancy) some completed later. Before the eOAR, the student nurse attrition rate for adult nursing at ARU was higher than the national average at 37%. There was a reduction in attrition to 29% for the students in the cohort in this case study who used the eOAR from the start of their second year. In the case study cohort, 6% of students completed late, so overall, 23% of the group completed their course. Sept 2016 was the first cohort of adult student nurses to use the eOAR from the start of their course—attrition for this group had reduced to 14%.

The value of this impact is not limited to individual student success; it also benefits the NHS and reaches into society with additional nurses qualifying, reducing the NHS staffing crisis. In addition, it prevents ARU from incurring annual losses of £9,500 for each student who fails to progress.

Cohort	Specialism	Attrition %	
Mar 2015	BSc (Hons) Nursing (Adult)	37%	Prior to introduction of MyProgress
Sep 2015	BSc (Hons) Nursing (Adult)	29%	MyProgress Case Study group used app from second year
Mar 2016	BSc (Hons) Nursing (Adult)	39%	Did not use MyProgress (as no funding available at the time to expand use of MyProgress)
Sep 2016	BSc (Hons) Nursing (Adult)	14%	First cohort to use MyProgress from start of the course
Mar 2017	BSc (Hons) Nursing (Adult)	15%	MyProgress
Jan 2018	BSc (Hons) Nursing (Adult)	9%	MyProgress
Sep 2018	BSc (Hons) Nursing (Adult)	11%	MyProgress
Jan 2019	BSc (Hons) Nursing Adult	ТВС	MyProgress

Table 18 Adult Student Nurse Attrition 2015 to 2019

It must be acknowledged that the eOAR did not by itself solve the intractable issue of student nurse attrition. Hamshire, et al. (2019) discuss using the 'wicked problem framework' developed by Rittel and Webber (1973) to target complex problems to manage. The wicked problem framework requires addressing student nurse retention through an integrated approach of targeting several intersecting wicked problems, including personal circumstances, workload tensions between theory and practice and a placement culture that views students as 'a faceless subservient entity that cannot make mistakes even in an

environment that is designed to facilitate learning.' At ARU, student nurse attrition was reconceptualised as a system issue to avoid the repetition of modest solutions. Instead, the faculty targeted the three systems which may influence the students' experiences – their personal systems, the university education system and the clinical education system. So, for example, the personal tutorial system was enhanced with a new strategy, including an education programme for academics in the role of the personal tutor. The eOAR was one element of a potpourri of solutions.

Whilst it is impossible to quantify the impact of the eOAR on the improved retention of student nurses, it is possible to consider that it contributed within an integrated strategy. Mitchell, et al. (2021) undertook a comprehensive synthesis of interventions adopted to support student retention in nursing programs. One recommendation is that support strategies should stimulate community building between students, peers, and faculty. The eOAR offers this opportuning to connect the community of students, mentors and academics through a single media, potentially minimising the disconnect between university and practice and fostering relationships and the sense of belonging students need.

It is now too late for ARU to conduct a group comparison study to evaluate the impact of the eOAR, as this would be a retrograde step with potentially adverse effects on student progression. However, a clearer understanding of the influence of the eOAR on attrition could be obtained as other universities adopt this or similar approaches and evaluate if comparable improvements in continuation rates are observed.

9.7 Chapter Summary

Using an eOAR enabled engagement data with a practice assessment to be analysed and confirmed a long-held suspicion by academics that formative assessments frequently were submitted late or not at all. Using the eOAR and activating automated alerts reduced the number of late and non-submissions of both formative and summative practice assessments. The use of the eOAR permitted accurate tracking and of summative and formative assessment, which was not achievable with paper PADs.

Additional unexpected benefits of implementing the eOAR include environmental gains, such as a reduction in the use of paper and the requirement for academics to travel to placement areas with savings in time and fuel. However, some impacts, including the use of the tablet as a pedagogic tool and the App's use as a communication tool, were emerging and yet to be fully realised or appreciated.

Community mentors were consistently more positive than hospital mentors about the benefits of using the eOAR and the potential pedagogic use of the tablet devices.

Chapter 10: Discussion

10.1 Introduction

The discussion chapter revisits the research questions, drawing on the analysis of the data from the student focus groups, academic interviews, mentor survey and data analytics contained within chapters five to nine. The following discourse represents a construction of the student nurses', mentors' and academics' experiences regarding the implementation and utilisation of the eOAR.

10.2 Legitimacy of the Paper PAD

The first section of the discussion addresses questions one and two.

- What is considered legitimate practice in completing the student nurse paper version of practice assessment documents (PAD)?
- Was there divergence from legitimacy identified by the personal tutors and if so, what was the nature of this divergence?

Legitimacy has a duality of meaning in this context, what is valid according to the NMC regulations and what the community of practice negotiated as legitimate in completing the practice assessment documentation. Both meanings are explored.

10.2.1 Legitimacy of the PAD to meet NMC regulatory requirements.

The research findings were consistent with the body of literature identifying academic issues with the paper-based practice assessment of student nurses. Problems with the theory-practice divide (Greenway, Butt and Walthall, 2019; Ferguson and Jinks, 1994; Hewison and Wildman, 1996; Landers, 2000), grade inflation (Seldomridge and Walsh, 2006), failure to fail (Hauge, et al., 2019; Hughes, Mitchell and Johnston 2019; Hunt, et al., 2016a), assessments completed late (Burden, 2014); inconsistencies in how mentors conduct assessments (Dolan, 2003; Fitzgerald, Gibson and Gunn, 2010; Bradshaw, et al., 2012;

Hunt, et al., 2012; Duffy, 2003;) and a lack of time to undertake assessments (Butler, et al., 2011; Cassidy, 2009) persist.

Practice assessment needed to comply with the NMC (2008;2010) regulatory requirements if it was to be legitimate. Students, mentors and academics raised a range of concerns over the PAD's completion, which posed a threat to its ability to meet the required standard. Three practices related to how the students used the PAD included tatty books (5.4.1), not bringing in the PAD for completion (5.4.2) and losing the PAD (5.4.3). Three practices focused on how mentors used the PAD; Mentors not spending time with the students completing the PAD (5.4.5), grade inflation (5.4.6) and failure to submit assessments on time (5.4.7). One issue, incomplete assessments, had areas of legitimacy concerning how the students and mentors used the PAD.

Section 5.4.2 highlights academic concerns that some students were not presenting their PADs for formative assessment or feedback to their personal tutors or mentors. Formative assessment is described as an assessment for learning as opposed to summative, which is the assessment of learning (Rowntree, 1987). Some students obstructed mentor access to their previous assessments. There appears to be a lack of understanding about the importance of formative assessment by students and mentors (5.4; 9.3). The formative assessment remained incomplete or completed close to the summative assessment, so there is no time to improve. The formative assessment did not serve its purpose of providing the opportunity for students to reflect on their progress and improve. It is possible that missed formative assessment and the associated records could result in insufficient evidence to grade the student or identify failing students correctly. Almost half of the mentors spent an hour or less providing students with feedback during a placement (5.4.5).

There is no guidance from the NMC for how long mentors should spend with students providing feedback, however it must be determined if an hour is sufficient time for a six-week or longer placement to identify areas for competence development. The Standards for Student Supervision and Assessment (NMC, 2018a) highlight the principle that students must acquire a minimum level of competence and that it is the responsibility of students to take ownership of their assessment and be accountable. The Standards also reinforce the need for students to be supported in practice to achieve competence.

10.2.2 Legitimate practice in using the PAD as a negotiated understanding

At the epicentre of the nursing practice assessment, data collected for this study and a key contribution to original knowledge emerged was a lack of community legitimacy of formative practice assessment. This was evident in the data from both student and mentor participants. The formative assessment practices can be understood in the context of negotiating the meaning of the assessment by the academics, mentors and students.

Wenger (1998, p.53) describes how "practice is about meaning as an experience of everyday life"; it is a process which involves 'negotiating meaning" and that this process comprises the interaction of 'participation' and 'reification'. The discussion which follows explores what Wenger means by 'participation' and 'reification' applied in the context of the completion of the students' practice assessment.

Participation is defined by Wenger (1998, p.55) as 'the social experience of living in the world in terms of membership in social communities and active involvement in social enterprises." The 'social enterprise' of completing the practice assessment took place in contexts that combined a vast array of factors; the business of the placement, the experience of the mentor in working with and undertaking assessments of students and where the assessment was conducted, e.g., in the community or hospital setting. Academics were not active participants in this setting on a day-to-day basis and were isolated from the student-mentor negotiated meaning of practice assessment. Furthermore, the context in which an experienced academic looked at the practice assessment differed from that of the student or mentor. The academic's focus was drawn to the regulatory requirements, the competency framework, student achievement of the learning objectives of the stage of training and the requirements of the NMC for the supervision and assessment of the student in practice.

Reification is 'the process of giving form to experience by producing objects that solidify experience into 'thingness' (Wenger, 1998, p.58). Thus, reification is the creation of an artifact that makes something abstract concrete. In this case study, the experience comprised the student enhancing their clinical competence– working alongside their mentor in clinical practice, caring for service users, learning and practising new skills and gaining confidence. Participation in practice included daily nursing care, communication and collaborative tasks with their mentor. Reification took the form of formative and summative

practice assessment; it was the formal process associated with completing the assessment and producing the artefact. Reification entailed evaluating the student's skill development in relation to the cluster skills and their interprofessional skills framework, as outlined by the NMC (2008), the student reflecting on their competence and identifying areas for development in dialogue with their mentors. Importantly, it involved documenting these processes in concrete form in writing in the artefact; historically, this was the PAD replaced by the eOAR in this study.

There was an imbalance between participation and reification in the assessment of the student nurses' clinical competence. Participation prevailed; mentors facilitated lots of learning experiences and participation with the opportunities for skill development. There was a propensity, however, to not fully reify this participation as formative assessments were not completed on time or some parts of the assessment documentation were left uncompleted, such as the action plan. In addition, although less prevalent, some summative assessments were not completed on time and were occasionally left uncompleted. Certain behaviours, such as late completion or non-completion of formative assessments, appeared widespread and appeared to be considered legitimate within the community of practice . With the PAD, it was difficult to ascertain how significant this issue was.

The meaning for the mentors rested with students' integration into the community of nurses; learning was centred around participation. During this participation, there was likely to have been continual informal feedback from mentors to students. Formally documenting the students' experience and anchoring them in the competency framework and NMC regulatory requirements were seen to be of lesser importance in the negotiated understanding. As a community of practice, the mentors were less invested in reification. The mentors' processes to complete the PAD reflected the lack of value they held in some assessment elements. Mentors completed them in seclusion from the students at home; formative assessment was frequently completed late or not at all, with limited time for feedback discussion.

For academics, the dichotomy between participation and reification in the meaning of practice assessment was weighted differently. Reification was more important than it appeared to be to mentors. Academics were concerned with ensuring that all assessments had been completed. Sometimes the concern with ensuring that the reification was undertaken made little sense from a participation perspective. Sending students back to placement so mentors could provide and record formative assessments after the student

had completed the placement had no value in participation. Academics had a clearer understanding of the regulatory requirement for student nurses to provide evidence of skill development and demonstrate professional values, indicating that reification was for them more important compared with mentors.

The difference in the balance of participation and reification between academics and mentors is noteworthy when considering how the practice is constructed for student nurses in the UK Focus is on accumulating 2300 hours in practice over a period three years (NMC, 2010; 2018a). These hours must be completed regardless of whether reification indicates that the student has attained competency in all areas of practice. However, competency can only be ensured and evidenced by reifying the participation against the achievement of the cluster skills and interpersonal skills and ensuring and then directing learning opportunities accordingly. Increasing participation without reification could result in students repeating the same skills and ceasing to learn. Therefore, attaining a predetermined number of participation hours is not an effective method for ensuring student nurses learn well.

10.3 Introducing the eOAR and its legitimacy

The previous section of this chapter focused on the problems with the legitimacy of the paper PAD; this section will now cover on the findings of the difficulties encountered in the introducing the eOAR and establishing its legitimacy. The discussion addresses research questions three and four.

- Why is electronic practice assessment difficult to introduce in the learning landscape/community of practice?
- What aspects of electronic practice assessment are perceived as legitimate by academics, students and mentors? How can electronic practice assessment be made legitimate?

10.3.1 Why is electronic practice assessment difficult to introduce in the learning landscape/community of practice?

My research findings corroborated with the literature on many areas of difficulty in adopting e-practice assessment. Areas of agreement included limitations of digital literacy of students and mentors (7.2) (Dearnley, Haigh and Fairhall, 2008; Black, Kane and Elworthy, 2014),

hardware issues such as short battery life (7.3) (Dearnley, Haigh and Fairhall, 2008) and slow tablet processors (7.3.2) (Black, Kane and Elworthy, 2014), access to suitable computers and the internet in clinical placements (7.3.3) (Bogossian and Kellett., 2010; Smith and Cambers, 2017; Black, Kane and Elworthy, 2014; Li et al., 2019), safe storage of tablet devices in placements (7.5.1), insufficient staff time to complete assessments (Bogossian and Kellett., 2010; Smith and Cambers, 2017; Black, Kane and Elworthy, 2014) preference for paper assessment (Bogossian and Kellett, 2010), navigation around the e-assessment (7.4.2) (Garrett, MacPhee and Jackson, 2013; Smith and Cambers, 2017;); Societal acceptance (10.3) (Mackay, Anderson and Harding, 2017; Dearnley, Haigh and Fairhall, 2008) and students not taking devices into practice to complete their assessments (Dearnley, Haigh and Fairhall, 2008; Li, et al., 2019).

The following section of this chapter will explore the findings and consider why it was challenging to introduce the eOAR within the community of nursing practice. Leading this change required a specific skill set; leadership and project management skills were essential, and so was an understanding of the community of nursing practice and education that only exists in those already part of the community. Part of this leadership task was aligning the perspectives and activities of the community.

10.3.2 Alignment of meaning

As discussed, the academics, mentors and students attached different meanings to the practice assessment. Consequently, alignment was required to coordinate perspectives and focus energy on a common purpose. Wenger-Trayner, et al. (2015, p.21) explain the significance of alignment.

"Our engagement with practice is rarely effective without some degree of alignment within the context – making sure that activities are coordinated, that laws are followed, or that intentions are implemented".

Alignment was also needed to ensure that the layout and functionality of the eOAR met the users' requirements (see 7.4). The assessment came with a history; it was based on E.U. regulations, which are interpreted by the NMC (2010). The academics understood the

importance of meeting the regulatory requirements, assessing the students against competencies, maintaining records, offering feedback and meeting quality assurance and standards for the students to graduate. Therefore, the academics were able to identify the PAD's flaws. There were flaws with the PAD that irritated the tutors, but they were not surprised because they had witnessed it previously.

Students understood the necessity of completing their assessments to earn a degree and register as a nurse. They desired feedback from their mentors, and they wanted to complete the course so they would gain employment and achieve their goals. The meaning of the assessment for them was personal; it was about their success or failure.

The mentors understood the importance of students developing clinical competence but did not share the same understanding of the meaning of the assessment as either the academics or the students. The mentors likely provided a variety of learning opportunities, but patient care was their top priority. The mentor's goal was to ensure that the student could safely care for patients and contribute to the community. Completing the assessment document was not always seen as adding value to their primary responsibility of caring for patients. This case's findings parallel those of Williams (2018), who found that although firstyear student nurses understood the importance of acquiring competence, they encountered inconsistencies in learning experiences and availability and engagement of mentors. Participants in William's research reported that while mentors provided valuable learning opportunities and were supportive in helping students learn, they were less aware of their responsibility in assessing students. They did not comprehend the learning outcomes, lacked confidence in the process and were reluctant to complete assessment documentation. The reasons why the students failed to complete formative assessment may, therefore, be both intrinsic and extrinsic.

The mentors and students were not as immersed in the regulatory requirements, the recordkeeping, the standards and quality assurance processes that are checked and scrutinised, the inefficient storage and sorting of paper records and the big picture. They were immersed in the present, which contained patients requiring their care. They were busy and time was limited. Practice assessment, therefore, sits at the boundary or even creates a boundary in the landscape of practice and understanding between academia and clinical placement. As Wenger -Trayner, et al., (2015, p.17) identify, "boundaries between practices are never unproblematic, in a sense, they always involve the negotiation of how the competence of a community of practice becomes relevant (or not) to that of another."

Formative practice assessments did not appear valued by mentors. Late submission and non-submission of formative assessments appeared acceptable to mentors. This is problematic, as it raises questions regarding how students are supported through the assessment process to maximise their learning. From an academic perspective, formative assessment does not carry the same connotation as summative assessment and students cannot be failed for failing to complete it (Anglia Ruskin University, 2020). It enhances learning, encouraging students to reflect on their strengths and weaknesses. Nonetheless, it was a regulatory requirement (NMC 2008, p35) that mentors provide 'constructive feedback to students and assist them in identifying future learning needs and actions managing failing students so that they may either improve their performance and capabilities for safe and effective practice.' Without documented formative assessment, there is no evidence that this constructive feedback has been provided.

Furthermore, the requirement for formative assessment has been strengthened in the current Standards for Student Supervision and Assessment (NMC, 2018b). Practice supervisors must provide students with feedback on their progress towards, and achievement of, proficiencies and skills (3.3) and to 'contribute to the student's record of achievement by periodically recording relevant observations on the conduct, proficiency and achievement of the students they are supervising' (4.1). These observations must be recorded to ensure sufficient information for the practice assessor to be assured about their decisions regarding the student nurse's assessment and progression (7.7).

Completing the practice assessment of a student requires a particular understanding of appraising the student's competency, including how language is used and expectations of student performance at different points in training. The literature is unequivocal that mentors are frequently confused about the requirements of assessing student nurses in practice and need more guidance (Dolan, 2003; Fitzgerald, Gibson and Gunn, 2010; Bradshaw, et al., 2012). Often, the assessment reflects the relationship between the mentor and the student. There is evidence that mentors use accrued impressions, influenced by expectations of a shared construction of the 'idealised student', to assess performance rather than course competency frameworks (Burden, Topping and O'Halloran, 2018). The mentor, therefore, brings to the assessment process her negotiation of meaning by and of being a member of

her clinical community, as well as her history of participation in its practice. The student is a newcomer to this clinical community and the student's assessment contributes to shaping them to be accepted as members.

The assessment process is, therefore, fraught with tension for the student. Meaning is negotiated through the social relationships between the student and their mentor. There is an unspoken contractual alignment to achieve agreement in which the student often defers to the mentor's authority. It appeared that the resolutions of meaning were incomplete. The objective of formative practice assessment was not mutually agreed upon through negotiation. The students desired to complete their formative assessments on time but could not always negotiate this. This negotiation of meaning reflects the work of many theorists on the concept of the journey from novice to expert, where in the novice stage, students will follow rules and must conform to the rules of the profession (Dreyfus and Dreyfus 2004, pp.251-264; Dreyfus 2016, pp.177-181; Benner, 1984). It is also consistent with theories of the power relationship between students and their mentors in an apprenticeship model where the novice gains societal acceptance to become part of the community of practice (Wenger 1998; Lave and Wenger 1991). By embracing the mastery of the mentor, the novice earns community acceptance. This is the hierarchy within a community of practice that Lave and Wenger (1991) claim that most students find difficult to navigate and consequently comply to. This explains the difficulty for students having to 'teach' mentors how to use the eOAR. As evidenced by the data, students recognised this and used strategies such as humour to help transverse the hierarchy and support their mentors in learning.

Social practice includes the explicit and the tacit, unarticulated conventions of what is said and what is left unsaid. Unspoken guidelines included the mentor removing the paper PADS to be completed. The tacit is what we take for granted and need not be articulated; the students recognised the mentor's authority. This resulted in a reduction in the time that mentors spent with the students documenting feedback; these were the embodied understandings from which the students had little influence to deviate. They were required to share the conventions of the community of practice in order to participate. The social negotiation of position within the community was very carefully played.

The eOAR shifted the power structure. This was demonstrated when one of the mentors asked a student, ' Are you are ok with me not completing the assessment on time? 'The

expectation was that students in a subordinate position would concede to the mentor; the eOAR broke this contract. The eOAR flagged late formative assessment so removing the student from the negotiation. This had a positive impact, given the student status in the community. The eOAR mediated by assuming responsibility for the decision. The student could say she did not mind – but the app would create a record of the late submission that could not be negotiated. Consequently, the students were able to complete their formative assessments on time while maintaining their status as novices and not undermining the authority of their mentors.

Students who had mastered the new technology to complete the assessment taught their mentors on how to use the app, which had the potential to make learning between the mentor and student more of a partnership activity. As many mentors had not attended training, the students invited the mentors to participate in their experience. However, for some mentors, this shift to collaborative learning was unwelcome.

The eOAR was a computer program. This made it an extreme example of reification designed to generate alignment without negotiation, which had both positive and negative impacts. No longer was it acceptable for formative assessments to be completed late and for them to go ignored during the placement. Personal tutors were able to check the progress of their entire tutor group quickly from any internet-connected computer. Students and mentors could then be contacted via the app or email or the placement area link team to check if support were needed. Locking down the submission of summative assessments on the due date made it impossible to complete them late without the students making a formal request for an extension. This lack of negotiability engenders either strict alignment regarding the reification or no alignment. So, on the one hand, it compelled formative and summative assessments to be completed on time; while on the other, the absence of social negotiation created resistance to its introduction.

A risk with reification 'artefacts' such as the eOAR is that they tend to perpetuate the repertoires of practice beyond those that shaped them. When policies and procedures are applied to new circumstances, they begin to take on a new form, space, or meaning (good or bad). Thus, GDPR (Council Regulation (E.U.) 2016/679, 2016) concerns and processes applied to digital patient records were transposed into student practice assessment. There is an important distinction between students recording patient information on their mobile devices and keeping a practice log (which they own). Clarifying the ownership of the eOAR,

i.e., that Anglia Ruskin was the Data Controller and that the record belonged to the student, was vital for aligning understanding. Also crucial was the students' comprehension that the eOAR was an assessment and that submission of assessment by students was part of the contractual agreement between them and the university.

The different placement areas were too broad, diverse and diffuse to be treated as a single community of practice or to attempt aligning them to a single understanding of the eOAR. Furthermore, treating them as one community would have glossed over the discontinuities that were integral in their structures and experiences and understanding of mentorship.

10.3.3 Constellations of practice

Wenger (1998) describes a broad, diverse and diffuse community, identified above as "constellations of interconnected practices".

"The term constellation refers to a grouping of stellar objects that are seen as a configuration even though they may not be particularly close to one another, of the same kind, or of the same size."

(Wenger, 1998, p. 127).

The placement areas in this study were all within the NHS, so in theory, they are the same organisation. The practices of each area were, however, nuanced. They all had their focus and interpretations of practice. ARU holds these stellar objects in equilibrium by coordinating and leading the education of nurses throughout the constellation of practice within its universe. Each one of the areas of practice negotiates its place within the constellation.

The complexity of the change can be understood by considering how the meaning of the eOAR was negotiated for such a vast constellation. There was a need to redefine the eOAR to make the effort to complete it worthwhile for the mentors; the mentors needed to add a new repertoire to their practice – some did not have the necessary digital skills or were reluctant to shift. Based on my experience, I believe that a key factor needed to get mentors to adjust their practice was the project lead having sufficient legitimacy within the constellations of interconnecting practice to change the regime of competence and create new knowledge in the process.

The PAD reflected a specific reification process in which the community of practice was invested. With the eOAR, the practice assessment process, i.e., looking at evidence to support students' achievement of competence by working alongside them, was unchanged—however, the process of discussing and collating the evidence and making an assessment judgement changed. The way mentors completed the PAD, in their timeframe, taking it home, away from the student with limited formal feedback and student engagement was one they may have wanted to perpetuate with the eOAR but could not. Likewise, academics continued with paper practices even when they had a digital assessment. An unwieldy paper PAD survives because it is easier than learning new skills and adopting new ways of working, particularly learning new skills with the community of practice master/student dynamic. The eOAR was tricky, at first, for students, academics and particularly mentors to navigate. Experience in using the app and development of the interface was needed to make the assessment's new digital habitat more habitable.

Holding the stellar objects in equilibrium necessitated balancing the pressures from practice and academic colleagues to return to paper with a force to engender change and prevent the transition to digital from collapsing. This force was brokering; without brokering, the active change process would have failed; just as a star exists in a state of dynamic equilibrium and once its energy sources are exhausted, it will collapse. Brokering was a high-energy endeavour and this energy needed to be expended continuously.

10.3.4 Brokering

Brokering involves establishing connections across a community of practice. To enable coordination, effective brokers open new possibilities for meaning (Wenger-Trayner, et al., 2015, p.81). The job of brokering was complex. For the first six months of the project, I worked primarily alone. Brokering was a very proactive and exacting part of implementing the adoption of the eOAR. Much of my reflective journal of research documents my brokering journey. It involved a process of translation, coordination, and alignment between perspectives. It required sufficient personal legitimacy within the community of practice to influence the development of the eOAR and address conflicting interests. Toward this end, brokering provided a participation. Brokering the eOAR required boundary-crossing and entering the core of the community of the vast constellation. It, therefore, required the ability to manage the coexistence of membership carefully. I enriched boundary encounters and

crossed borders by visiting many practice areas, providing a broader exposure to the community of practice. If issues arose within practice areas that threatened the adoption of the eOAR, I visited the area to understand the meaning of the eOAR for that specific community and translate its use to one that worked for them.

One example of brokering occurred when a secure mental health unit advised that they could not work with the eOAR. Their rationale was that a category of patients within the unit included sex offenders; mobile devices had to be left outside. When I visited, I was able to ascertain that students could complete assessments either on the computer in the unit manager's office or outside the unit on their mobile devices in the staff room. Clinical placement areas frequently viewed digital devices as a threat to patient confidentiality, particularly in places when patients were vulnerable. For example, events in Cambridge involving paediatric consultant Miles Bradbury using a 'spy pen' to record indecent images of sick children (Bakshi, 2017) made negotiating the use of personal mobile devices in local paediatric wards sensitive. Brokering in these circumstances required visiting managers in placements and discussing the ethics of student nurses carrying mobile devices. Some areas had blanket bans on personal mobile devices being carried by nurses and student nurses but not medics and medical students. Discussions about risk, student nurses' requirements to adhere to NMC professional code of conduct and drawing up student agreements of safe and acceptable mobile device use in practice, which all student nurses signed gained permission to use the devices in these areas. Brokering involved discussions with placements on a range of concerns they raised, most frequently being data protection, infection control risks and safe storage of the tablet devices in placement areas.

The pursuit of brokering the adoption of the eOAR required the ability to reframe the message to encourage participation by each community of practice to participate in the endeavour. I used existing networks and sources of power to achieve goals; the unwavering support of the Deputy Dean for Learning and Teaching was an essential source of power in leveraging both the Faculty Senior Management Team and external sources of funding. Within practice areas, I was able to use personal connections with nurse managers I knew in my role as a link tutor and registered nurses who had once been students in my tutor group at ARU, now mentors with some who had moved into leadership roles. Over ten years of experience as a nurse academic at ARU meant I had many personal contacts in placement and academic positions within the faculty.

Probably the most crucial brokering work was between technology and the app users. Computers are very good at dealing with reification because they can handle enormous guantities of information. The app could not, though, combine reification and participation therefore, it could not assign meaning to the assessment. Computers cannot negotiate meaning - that is a human thing. I wanted to understand what the mentors, students, and tutors, needed to get out of the I.T. - to enable brokering between I.T. and humans. The eOAR may appear to be a self-contained artefact, but it is not; it is a nexus of perspectives and the meeting of these perspectives that give it its meaning (NMC, Academics, Students, Series of Mentors, Sign off Mentor). In this context, the design of the eOAR is the design of a boundary object, providing a shared focus and framework to support and record the discussion of the students' progress in achieving competence. It needed to consider where boundaries sat and who could traverse them. This design task included how each assessment was laid out, the relationship of one assessment to another assessment, i.e., the flow, the deployment of the assessments to be completed (to the mentor, student, or academics), how assessments were completed by the assessor, incorporating service user and interdisciplinary feedback, returning the assessment to the academic and then back to the students.

Another of the practices I used to cross a boundary were the digital scholars. These were ten student nurses who volunteered to support their peers in learning how to use the eOAR. The digital scholars had enhanced training in using the app and supported their peers. They often answered questions their peers raised informally during breaks between classes on campus, providing rapid support and tips for using the app. I met with the digital scholars regularly to gain insight into issues that their peers and mentors who supervised them in practice had with the app and their ideas for improving the platform.

As discussed above, the brokering activity was unrelenting and exhausting and required resilience. This resilience was sustained through imagination.

10.3.5 Imagination and role as a convenor

Imagination is an essential component of our experience and of how we see the world. With imagination, we transcend what we are doing and see another world. So, with the eOAR, resilience required imagination, holding onto a vision and maintaining excitement in sharing that vision. Wenger (1998) describes how imagination can mean the experience of what

individuals are doing, even though they may appear to be the same thing, is somewhat different.

"Imagination in this sense it's looking at an apple seed and seeing a tree. It is playing scales on a piano and envisioning a concert hall. It is entering the temple and knowing that the ritual you are performing is performed and has been performed by millions throughout the world."

(Wenger, 1998. p.176)

Developing the eOAR was not merely about converting a paper assessment to a digital version; I saw beyond that to a transformation that envisaged improved student assessment through more timely support, better record-keeping, environmental benefits, improved assessment processes and enhanced communication between mentors, students and academics. In the beginning, few people shared my imagination. The challenge was to express my vision for the eOAR in a way that made sense to the users and was meaningful for them. Each user of the eOAR or group of users only grasped part of the vision, at least initially. Therefore, how I expressed the vision was adapted to meet the understanding of the audience, I was addressing. So, for example, with mentors, I would discuss how the eOAR could aid their NMC revalidation and triennial review. For academics, I would discuss how it would enhance record-keeping and enable them to engage with students and mentors in placement. I found students most excited about using tablet devices and improving their digital literacy. For ARU management, I would address adherence to NMC regulatory requirements, enhanced student experience, reduced attrition and cost-saving in academic travel expenses and photocopying.

Wenger-Trayner, et al. (2015, p.106) describe this work of sparking people's imagination and opening up new ideas as the role of a convenor.

'What they [convenors] propose is not just a vision. It is a new narrative about the landscape, its potential and people's identities in it. Such an aspirational narrative invites a configuration of stakeholders to undertake something that no one thought possible...The challenge in sharing an aspirational narrative is to get people to identify with it, or at least a part of it from their perspective. Convenors need to talk to a lot of people and rehearse their narrative with different audiences and in different settings.'

Imagination needed to come together with action to be productive. It required the ability to stand in the shoes of the mentor, student and academics and see how they perceive the eOAR. Imagination also needed the freedom and time to create and for faculty management to suspend judgement when things did not always go well. Imagination played with the assessment; it rearranged it and proposed new configurations of reification based on mentor and student and academic feedback on their use of the eOAR. In the process, I learned that to gain traction in the adoption of the eOAR, it needed co-development to improve it and make it more user-friendly for all stakeholders.

In contrast, a lack of imagination of the potential benefits of using a digital platform, for practice assessments, from mentors contributed to challenges with users accepting the change to digital assessment; why this caused issues will be discussed in the next section.

10.3.6 Accepting change

It was evident that some mentors did not want to change and preferred to maintain the status quo. They did not share my vision and were not excited by the innovation. Schön (1971), in 'Beyond the stable state', argues that stability is a dynamic rather than passive property of systems. If something remains the same, then an effort is being undertaken to keep it the same. He describes the stable state as homeostatic; it self-regulates to preserve its form. Schön wrote, "belief in the stable state is belief in the unchangeability, the constancy of certain central aspects of our lives, or belief that we can obtain such a constancy" (Schön, 1971). Holding onto what we know and what is familiar is appealing to many people as it guards against uncertainty. But, of course, change is inevitable and the belief that we can hold onto constancy is false, particularly with the pace of digital innovation. If the stable state is lost, then, Schön identifies there are four responses, return (going back to the past), revolt (which is apparently against the former state, but in such a way that the past is enabled to return clandestinely), mindlessness (which seeks to escape from the reality of change) and learning (Schön, 1971). The data indicated that some mentors and arguably the organisations/systems for which they worked were escaping from the reality of change by either not communicating or receiving the message about the

training, not facilitating/attending training or denying that change was happening. Other mentors were holding onto the paper PADs by getting students to print them out and thus maintaining constancy for themselves. This is congruent with 'revolt', as defined above. In developing his theoretical explanation of the stable state in 1971, it is unlikely that Schön would have foreseen the scale or pace of change of the digital age and the impact that this has had on professionals' belief that constancy is possible.

Preparing the mentors to use MyProgress was much more challenging than the students and academics. The data revealed several reasons the mentor training was not as successful as it could have been. Timeliness of the training additional follow-up sessions were also needed close to when the mentors engaged with the students using MyProgress. Communication about the availability of training was either not being transmitted to or received by the mentors. Some mentors who received the message ignored it as they did not see the training as a priority until the students turned up with the eOAR. Even when faced with a student with the eOAR, some mentors did not access the available training. It was challenging to provide all the face-to-face training to many mentors within the complex constellation just before the eOAR was introduced. The sheer size, diversity and geographical spread required military logistical skills, exceptional leadership and adaptivity to maintain the vision and tailor it to the needs of individuals or groups.

It is also clear that during the two years this case research covered, academics had not entirely shifted to digital practice. This intransigence was evident, for example, in the evidence of academics using and not contesting training resources for completing the PAD even though it was no longer in use. The digital platform was adopted, but paper ways of working, such as checking students' eOARs one at a time, persisted. At the core of the adoption of the eOAR was its legitimacy as a tool for practice assessment within the community of practice. It needed to have a certain amount of legitimacy before it was accepted. It needed to be tried, tested and trusted by users and evolve to thrive in the environment it inhabited. Wenger, et al. expertly articulate how communities adopt technologies.

> "As communities appropriate technologies, they 'make themselves at home in new ways and places. They shape their digital habitats and the technologies they contain through novel use, asking more of the technology creators and suggesting new directors for development. As tools

get easier to use, more and more members participate in the shaping process, taking the interaction between technology and community further.

(Wenger, White and Smith, 2009:P19-20)

Making the community feel 'at home' in the digital environment facilitates that environment's legitimacy and is essential to prevent the community from stepping backwards or revolting. Undertaking work to make to digital environment welcoming is important for any implementor of an eOAR. The eOAR was not initially a comfortable habitat for its users; shaping the technology and making it habitable was essential. This work is not complete and there remains a constant intertwining between the community and the technology, with users perpetually asking more of the technology and a need to evolve continually.

Gaining legitimacy for the eOAR within the community of practice for the eOAR was not easy. Schön describes the challenges for professionals like nurse mentors who inhabit the swampy lowlands of practice. Frequently, they learn by experience, trial and error, intuition, or muddling through. Although we may presume that professionals would take the high hard ground where research evidence is plentiful surrounding the messy problem and weaknesses of student nurse practice assessment, this was not the case. As much as mentors may agree with the need for digital innovation, their fears, lack of digital skills and the need to attend training, a desire for constancy and the mentors' central concern (to care for patients) causes a dilemma not always amenable to rational choice.

> "In the varied topography of professional practice, there is a high, hard ground overlooking a swamp ... In the swampy lowland, messy, confusing problems defy technical solution. The irony of this situation is that the problems of the high ground tend to be relatively unimportant to individuals or society at large, however great their technical interest may be. At the same time, in the swamp lie the problems of greatest human concern. The practitioner must choose. Shall he remain on the high ground where he can solve relatively unimportant problems according to prevailing standards of rigour, or shall he descend to the swamp of important problems and non-rigorous inquiry."

> > (Schön, 1987)

As Schön highlights in the quote above, technical solutions are not easily implemented in practice. Learning to use the eOAR in theory and practice is not the same. Impediments arose in the messy lowlands, which made adopting the eOAR challenging. A significant challenge was digital literacy. As Schön (1987) and Benner (1984) suggest, professionals are not reluctant to adopt an evidence-based stance to address issues in the Swampy Lowlands; it is more the case that they have learnt from experience that rationale solutions rarely solve real-world problems. So, practitioners do not ignore new evidence; they adapt it to meet the real-world problems as they arise, as Schön terms making new practice-based evidence as they go along.

The difference in this case study is that for some mentors, it appeared to be a lack of expertise, even fear of digital technology, which caused them to avoid using MyProgress. Therefore, mentors did not seem to know how to adapt; they were in a situation of entirely new learning. In Benner's (1984) terms, the mentors became digital novices while some students were digital experts. While some mentors saw value in learning how to use MyProgress from students, the traditional roles of novice and expert persisted, and some mentors felt threatened by students who had knowledge they had yet to acquire. Boundaries caused by power relationships remained between student and mentor that need to be traversed to facilitate co-learning.

In this research, all mentors had the potential to access MyProgress training, but at least 50% of the mentors did not make use of this access. Therefore, the question is whether one should focus more on enabling mentors to access training in a timely manner or develop student-mentor cooperation in learning to use a new form of experience, in this case, the eOAR. I do not think there is a single solution to mentor training; instead, a pot-pourri of approaches is essential to maximise engagement. I would advise to start mentor training very close to the launch of an eOAR and investing significant resources in this initial education in a 'big bang approach'. I would also advise to second an experienced mentor to the university to help lead the training, involving digital scholars not only in supporting peers but also in supporting and training mentors. Regular open online sessions via Microsoft Teams or Zoom for all mentors in any placement area make efficient use of resources and recorded presentations available 24/7 makes training accessible. It is important to understand that there will always be new mentors and developments of the eOAR, meaning

that training for all users, including the mentors, will need to continue as long as the eOAR remains in use.

10.3.7 Digital literacy

That limitation of digital literacy caused challenges in adopting the eOAR was not surprising, as it was well documented in the literature (Dearnley, Haigh and Fairhall, 2008; Black, Kane and Elworthy, 2014), What emerged from the findings, though, was a new taxonomy of six specific digital skills that are required to use an app-based practice assessment successfully (figure 68). This taxonomy identified skills necessary for using tablet devices for student nurses' assessment, something that has not previously been recognised in the literature. Therefore, digital skills development for nurses must go beyond computer use. It must address the competencies required for using mobile devices. This skill set must be addressed, or the lack of competence in this area becomes a barrier to adopting an eOAR.



Figure 67 Taxonomy of skills that support effective use of digital practice assessments using an app
10.3.8 Societal differences

It was evident from the mentor survey that there was a greater societal acceptance of digital practice assessment by practice-based mentors compared with hospital-based mentors. It is not clear why this was. Compared with hospital-based mentors, community-based mentors.

- More frequently agreed that MyProgress enabled them to access the students' practice records earlier in their sign-off placement.
- More frequently agreed that using MyProgress improved the information that was available at the practice education meeting.
- Were more accepting of students teaching them how to use the eOAR than hospitalbased mentors.
- They reported greater satisfaction with the eOAR as a tool for providing evidence with their CPD, including keeping evidence of NMC revalidation and tri-annual review.
- They reported spending more time with students completing assessments.
- Were more confident in the ability of the eOAR to prevent falsification of assessment?
- Were more positive regarding the accessibility features of the MyProgress app, including the usefulness of the spellcheck, changing the background colour on the screen, use of the speech-to-text facility on the tablet, the ability to edit assessment, the ability to type rather than handwriting feedback and improved legibility of the typed document.
- Were more confident in the security of assessment storage on MyProgress.

Nursing in a digital age (Queen's institute, 2018) provides insight into how community nurses view technology positively. The report presents findings from a survey of 534 community health professionals; 74% of the community nurses found I.T. systems more reliable than paper, although 29% of community nurses were still working mainly with paper-based systems. Overall, community nurses were willing to engage with information technology. Community nurses are more likely, out of necessity, to use mobile technology for communication and record-keeping; potentially, their familiarity with using mobile devices for work made them more positive. The hospital mentors who responded to the survey were mainly from Cambridge University Hospital Trust (CUH), one of the most digitally advanced

trusts in the UK In the preceding year prior to this research commenced, CUH had become entirely paperless. All patient observations within the trust were recorded on an iPhone and all patients' records had moved to a fully integrated digital platform. In 2015, following an inspection from the Healthcare Information Management Systems Society (HIMSS) to assess digital adoption and use of electronic systems for clinical care, CUH was validated against Stage 6 of the international Electronic Medical Records Adoption Model (EMRAM) (Cambridge University NHS Foundation Trust, 2020b). This is the second-highest level and no organisations at the time had achieved level 7. Potentially, the change to mobile practice assessment, so close to a significant digital change in patient record keeping, impacted the views of the mentors within the hospital. The mentors at CUH had very recently engaged in one significant digital change. There had been issues with the EPIC system at Addenbrookes, and they may have been overwhelmed by the volume of change they were encountering.

10.4 What aspects of electronic practice assessment are perceived as legitimate by academics, students and mentors? How can electronic practice assessments be made legitimate?

For the eOAR to be perceived as legitimate, it must have positive benefits for the community of practice. To make the eOAR legitimate, students, mentors and academics need to identify these benefits.

There was a positive transformation in the process of completing the practice assessment by academics and mentors that directed the focus explicitly on the achievement of competence by the student. Having a tool - the tablet or computer to complete the practice assessment changed the nature of the activity. Moving the practice assessment to a digital assessment did not change what competencies were assessed or the level of achievement- but it changed how mentors and academics went about completing it and the engagement of all users in the process with improved timeliness of completion.

While the mentor descriptive statistics indicated that the PAD and the eOAR took similar times to complete, how the mentors completed the assessment was reported to be markedly different by students. With the PAD, the mentors took the student's assessment and completed it unilaterally. Students reported that when using the eOAR, mentors tended to

spend more time with them, providing feedback and focusing more on the student and the assessment.

The interview data showed that tutors prepared differently for placement tutorials with students using the eOAR. With the PAD, the students would bring the document to the University to be discussed with their tutor at a summative tutorial and ideally before a formative tutorial. Frequently, the first time the tutor would see their students' practice assessments would be during this summative tutorial. The tutor would review the assessment in the meeting and discuss the student's progress. T5 describes how, when using the eOAR, he was able to read through the students' assessments before the meeting. By preparing in advance, he found that he had more time to talk with the students about their placement experience and that the tutorial was more 'fun'. Tutors could also track student progress and support them at a distance, something that had not previously been possible.

The eOAR initiated a change in the practice of completing the assessment by both mentors and academics. It brought balance in the community of practice between participation (the student engaging with learning experiences) and reification (giving form to that experience via the processes of completing the assessment). In addition, the eOAR could ensure the mentor, student and tutor engage more effectively together in discussions about competence and assessment achievement, and in the case of the tutor offering additional distant support. Sociologist Leigh Star (1989, pp.37-54) coined the term 'boundary object/ to describe objects that coordinate the perspectives of various constituencies for some purpose. The eOAR was a successful boundary object; it connected the student, mentor and academic and in working to support the student to achieve the competency requirements of the regulator, the NMC.

In addition to enhancing the assessment processes, the eOAR offered benefits as a learning tool. Benefits of using and eOAR that helped engage the mentor and student community included its potential to narrow the divide between theory and practice as the tablets provided access to educational apps (e.g., The British Nationally formulary, Resus Guidelines, Standards, Anatomy) within the clinical areas. In addition, getting mentors to appreciate the usefulness of the eOAR for their CPD galvanised support. Likewise, students with dyslexia seeing the benefits of accessibility helped with legitimising the eOAR

10.5 What, if any, benefits can an electronic ongoing achievement record offer the community of nursing practice?

Using eOAR may have contributed to improved inclusivity and student retention in several ways. The data following indicates improvements in the assessment experience, processes and recording of the outcomes and some enhanced learning experience. This was evidenced through findings from student focus groups and 1:1 interviews with personal tutors.

MyProgress improved the reliability and validity of the practice assessment. Where previously formative assessment occurred late, MyProgress now ensures that formative assessment and feedback in practice occur on time:

"The mentor was like ', you are not fussy about when you complete your assessments?' I said no – but this tablet is. I like that the tablet ensured the assessments were done on time."

Students' assessment feedback support in practice from their mentors improved:

"I think for me was the fact that it gave us allocated proper time that was definitely a positive, that you did not always get before."

My progress has supported the faculty to offer additional flexible work-based learning routes into professional nursing education, often suitable for mature learners, extending inclusive higher education.

It improved the digital literacy and teaching skills of students, key employability skills:

"I found the speech to text is a great ice breaker, I approached people, and they were like ', oh what do I put in your comment?' and I said, 'you can put whatever, what you observe about me, you can talk' and they start talking and then this 'ooo it does say that.'

Students' use of smart devices in practice improved the link between theory and practice.

"Yeah, I used mine for British National Formulary [of medication] and searching things on the internet." Students received enhanced and real-time support from their academic tutor:

"I can then go on to MyProgress and see what comments have been made. And judging by their comments compared to what the student is saying. Maybe they are worrying too much, and I can make them feel better, or maybe they are not worrying enough, and I need to get in touch with them."

The electronic ongoing achievement record (eOAR) has transformed the learning experience of student nurses with additional learning needs. One student explains.

"I have dyspraxia, ADHD and OCPD to be able to talk about how it can be a useful tool to have a comprehensive assessment that's fairer. I feel that the MyProgress platform does this well."

Whilst the introduction of the eOAR coincided with a year-on-year reduction in attrition and one could speculate that it may have contributed to this, it is not possible to make a direct relationship, as so many other variables may have also influenced retention.

Environmental impacts include reducing paper use and requiring academics and students to travel long distances by car to review assessments.

Most recently, the App has proved invaluable through the ongoing COVID-19 pandemic. It has enabled remote support for students at a time when the pressures of the pandemic make it imperative that student support be maintained and enhanced. When academics could not visit placement areas and paper documents are considered an infection risk, being able to record student progress and communicate with practice supervisors via a mobile app has ensured continual engagement and communication with students.

To find out the thoughts of our digital scholars on the use of MyProgress, please go to video link: <u>https://myplayer.aru.ac.uk/Play/4882#!</u>

Chapter 11: Conclusions and Recommendations

11.1 Introduction

This final chapter highlights the original contribution to knowledge and offers suggestions for those considering adopting an eOAR and undertaking additional research. It commences by summarising the aims of the research and the methodology used and outlining the study's limitations,

11.2 Summary of the study

This research explored the introduction of digital practice assessment into a Community of Nursing Practice in England. The thesis constructed a representation of the Case from the interconnections of the experience of students, mentors and academics. The intent was to make a significant contribution to knowledge that would aid to others in adopting comparable innovations.

The design frame chosen to answer the research questions was a single intrinsic case study with a mixed-methods approach. Data were collected from student focus groups, academic interviews and a mentor survey.

11.3 Limitations of the research

As a single case study undertaken within one School of Nursing in the East of England, during a specific period in time, it is acknowledged that the findings from this research cannot be generalised. Justification for these boundaries is provided in the research methodology chapter and is consistent with case study design. Qualitative research, however, can be flexible and allow creativity, thereby providing additional insights that could not have been collected through quantitative methods alone. As an insider researcher, the experience of the students, mentors and academics was interpreted through the lens I hold and my own use of the app. I have already acknowledged that subjectivity could not be eradicated in this study (<u>3.6.3</u>). Rather than treating subjectivity as a component that needed to be controlled, I perceived it as a component of how I understood the case. It provided a unique privileged and in-depth perspective that served as a valuable resource. However, care has been taken to ensure that my voice did not displace that of the participants by considering all the data collected, consistently re-evaluating the impressions and responses, and avoiding making assumptions.

Furthermore, I have been transparent in my methodology and provided 'thick descriptions' of all aspects of the study to contribute to rigour and allow the reader to determine if they can make inferences from the findings that would be useful if they are contemplating adopting similar digital practice assessment for student nurses.

11.4 Original contributions to knowledge

This case study research was unique in the following ways.

- This was the first study to evaluate the use of app-based practice assessment among student nurses in the UK.
- It explores the experiences of all users (nurse mentors, students and academics) in adopting and recording assessments using an eOAR.
- Exploring the experience of students from three fields of nursing (Adult, Child and Mental Health).
- Providing evidence of detailed benefits and impact of adopting an eOAR.
- Evaluating the MyProgress platform for practice assessment of student nurses
- Integration of qualitative and quantitative data via a complementarity approach (see 3.6.2) (Creswell and Plano Clark, 2017).

11.4.2 The influence of the duality of participation and reification on student nurse practice assessment.

This research is unique in its use of Wenger's social learning theory to understand the obstacles encountered in adopting an electronic ongoing achievement record for student

nurses. The findings resonated well with Wenger's (1998) seminal work on communities of practice. On page 63 of this book, Wenger presents a diagrammatic representation of the duality and interplay between participation and reification see figure 68 below. As the diagram highlights, these two factors cannot be considered in isolation. Achieving a balance between this duality was a key factor in the challenge of adopting the eOAR. They must coexist and they must live in harmony.



Figure 68 The duality of participation and reification. Wenger (1998: p.63)

Wenger alludes to a Yin Yan-like shape in her model. While she does not say so explicitly, I suspect that the hidden Chinese symbol is not a coincidence. Yin Yan is an ancient philosophy that views opposing energies as interconnected and counterbalancing. This Chinese notion of opposites as being interdependent and flowing into each other differs from a Western conception of paradox as the juxtaposition of polar opposites (Fang, 2012).

Based on the Chinese philosophy of Yin Yan, I conceptualise that mentors and academics developed cultures in which the different constellations in the community of practice possessed inherently different value orientations to practice assessment. The academics tended to focus on reification and mentors on participation. The students were positioned on the boundary – but on the participation side of the border. Thus, enabling academics and mentors to understand and embrace the opposite traits/values was key to the effective use

of eOAR. These values will always coexist but must reinforce and complement one another to shape effective student learning in practice. This meant for academics moving from a position in which their encounter with the eOAR primarily focused on reification at the midpoint and end of the placement to tracking student progress and supporting them throughout their participation. For mentors, this meant moving to a position in which reification became more participative, with mentors working in partnership with the student to complete the eOAR, rather than having limited engagement with the student in the reification process.

It became apparent that the importance of reification does not solely rest with the final output. The product (either the PAD or the eOAR) lacks value if the processes by which they are completed are not integrated into the participation. Reification and participation must continually flow back and forth between each other. For a student nurse to acquire the skills necessary to enter the community of practice, she must participate in practice, reflect on what she has learned, make the learning tangible through the reification process, and then reflect on what she still needs to learn before returning to practise.

Using the PAD, the flow was interrupted. Academics could only engage with the assessment paperwork infrequently and to a limited extent. Therefore, it is not surprising that the reification process offered minimal value for the mentors, as during the placement, academics had little engagement with eOAR. From a mentor's perspective, it may have appeared that the eOAR held little value for the University.

When the focus is out of kilter, an excessive reliance is placed on either reification or participation at the expense of the other; the legitimacy of the assessment will be compromised. If participation prevailed, learning was left undocumented, potentially leading to insufficient evidence of the student's developing competence. Additionally, the mentor would also not have been able to determine in which areas the student lacked proficiency rapidly. This can result in a mismatch between the learning experience and the student's learning needs, leading to no new learning. Also, the process/product of reification risks not meeting the NMC regulatory requirements.

The consequences of the imbalance could be perceived as symptoms of the resulting lack of validity and dependability of assessments. These symptoms (e.g., grade inflation, failure to fail, late or non-completion of formative assessment) create an endemic disease that has

been well documented in the literature review (see 1.5). Unchecked, the corollary could result in greater attrition rates or unsafe graduates entering the register. The focus of mentors on participation over reification also explains why it was difficult to engage them in learning how to use the eOAR.

If reification prevails, as when academics insisted that students return to practice to complete the formative assessment after the summative was submitted; or reification occurs with little opportunity for the shared experience or interactive negotiation (as occurred with some mentors completing practice assessment separately from the student), then there may not be sufficient intersection with participation for the reification to be meaningful and inform future learning. This explains why putting everything in writing does not always lead to student competence development or prevent failure.

To achieve balance, two things are required.

- There needs to be a negotiation of meaning whereby becoming a member of the nursing communities of practice is understood to constitute the dual process of participation and reification.
- A continual flow back and forth between participation and reification.

In figure 69, I have expanded Wenger's (1998:P63) depiction of participation and reification to incorporate original findings from this case study research. In this conceptual framework, the key focus of participation (placement experiences, real-world experiences and becoming a member of the nursing communities of practice) are balanced against both objects of and influences on reification (PAD, NMC, other regulations, competencies, the University and technology). The student is placed at the centre as aligning the meaning of participation and reification is necessary for their success in entering a nursing community of practice.

A ring surrounding participation and reification situates the mentors and academics where they are more often located in understanding the meaning of participation and reification. The outer ring includes the constellations that form the nursing community of practice that must be brought into an agreed understanding of the meaning of participation and reification as a duality and the role of the eOAR in supporting the equilibrium. This was accomplished through active brokering of the eOAR throughout the constellations. The eOAR is positioned at the juncture of participation and reification since it facilitates flow back and forth between these essential components of student learning.



Figure 69 Conceptual Framework: Duality of participation and reification applied to the legitimacy of the eOAR

11.4.3 Evidence that ease of reification links with the legitimacy of the eOAR within the communities of practice

Any factors which made the process of reification harder diminished the legitimacy of the eOAR. In contrast, factors that facilitated the reification process were likely to increase the legitimacy of the eOAR. Figure 70 below illustrates this balance and the factors which tip

the balance towards or away from the eOAR becoming legitimate. When planning the adoption of an eOAR a project plan that focuses on increasing the legitimising factors and reducing the opposing ones will increase the likely success of the rollout.

Increased legitimacy of eOAR

Education

• Training in use of app/ familiarity

• Ability to linke use of digital assessment to

•

- employability
- Clear understanding of governance feature of the app

Device

• Bring your own device

Access

- Available on both computer and app
- Works offline
- eOAR used by all students on a course standard practice
- Mentor working in community placement

Assessment

• Accessible features for dyslexic students • Logical layout and flow of the assessment

Decreased legitimacy of eOAR

Education

- Not attending training / inadequate traing in use of app or device
- Lack of confidence in governance features of the app
 Unfamiliarity with the app and assessment

Device

University provided Android tablet device

Access

- Only avaliable either on a desktop or app (not both)
- Requires wifi access or assumed to require wifi access
- Limited numbers of students using the app / perceived as a trial
- App being perceived as a research project rather than service improvement

Assessment

• Poor design and layout of the assessment

Makes reification easier

Makes reification harder

Figure 70 Factors which increased and decreased the legitimacy of the eOAR

11.4.4 Evidence that the use of the eOAR improved the interconnectivity between participation and reification.

The eOAR helped make student learning in practice more meaningful by contributing to both participation and reification. It provided a new way in which to participate in community interactions, a way to connect academics with mentors and students. It was able to reify the practice assessment, producing, storing, sharing and organising documents in a way that they could be accessed and viewed simultaneously and in real-time by the academic, mentor and student. It, therefore, pushed the boundaries of participation and reification by making it easier for the university to enter the student's experience in the real world of clinical placement. It facilitated co-authorship of the assessment in which students could reflect on their experience and have the experience reviewed and commented on by both the mentor and academic. The flow between participation and reification was opened up.

Reification became more meaningful and legitimised, as the process by which academics and mentors undertook the assessment was rewoven. Mentors moved to complete assessments with students rather than apart and formative assessments on time. Tutors reviewed the students' eOAR at regular intervals during the placement, enabling them to focus on mentors requiring support to understand the assessment. Sometimes with rapid cycles of interaction. The tutorial between student and academic shifted from focusing on reification to participation. As tutors could read the students' assessments before the meeting, reification had been completed before the tutorial, leaving time for the tutor to discuss the student's experience of the placement.

Increasing academic engagement with the eOAR through the digital platform may encourage the engagement of the students and mentors in several ways. The eOAR facilities an ongoing dialogue about student progress. It was utilised by tutors to provide regular encouragement for students. Through the ongoing conversation, tutors could also support mentors in constructing their feedback, particularly when students are not achieving the expected level of competence. Using time for regular engagement with students and mentors digitally is more efficient than visiting clinical placement areas.

Mentors were able to use the eOAR for knitting together participation and reification for their continuing professional development by using the record in the eOAR as evidence for NMC re-registration and tri-annual review.

Restoring flow and equilibrium between the Yin and Yan of participation and reification will probably improve the quality of practice assessment.

11.4.5 Identification of a taxonomy of specific digital learning skills users of app-based practice assessment need.

While taxonomies of digital capability exist (JISC, 2020; Health Education England, 2018a), this research revealed specific skills that students and mentors often lacked and needed to acquire in order to use MyProgress effectively. The taxonomy may be helpful for people involved in planning preparation for mentors, students and academics for future rollouts of digital practice assessment. As discussed in section 10.3.7 specific skills required to use mobile devices, and not identified in existing digital taxonomies, must be addressed or the lack of competence in this area becomes a barrier to adopting an eOAR.



Figure 71 Taxonomy of skills required for digital practice assessment using an app

Skills development in the use of mobile devices and apps for healthcare workers is important beyond the need to work with an eOAR. NHS England, NHS Digital and NHS improvement are encouraging the adoption of mobile technologies across the NHS. It is viewed as a

priority to release time to care and vital for the future efficiency of the NHS. Mobile devices are being used for a range of functions already. Nottingham University NHS Foundation Trust has deployed 6500 mobile devices for electronic observations. Oxford Health NHS Trust speech and language therapists are using mobile devices to allow children to hear back their pronunciation of words to support child language development (NHS Digital 2022).

The Kings Fund (Liddell, Adshead and Burgess, 2008) identified the need for the NHS to accelerate the adoption of mobile technologies to support the increase in chronic disease, such and COPD and diabetes and aging population in the UK to maintain independence. Identifying a taxonomy of skills needed to work with mobile devices and investing in skills development for student nurses in the use of mobile technology allows them to learn transferrable skills which will be necessary for their future careers in a 21st Century NHS.

11.4.6 Evidence of greater societal acceptance of the eOAR among community-based mentors.

Compared with hospital-based mentors, community-based mentors.

more frequently agreed than MyProgress enabled them to gain access to the students' practice records earlier in their sign off placement.

more frequently agreed that using MyProgress improved the information that was available at the practice education meeting

were more accepting of students teaching them how to use the eOAR than were hospital-based mentors.

reported greater satisfaction with the eOAR as a tool for providing evidence their own CPD including keeping evidence of NMC revalidation and tri-annual review.

reported spending more time with students completing assessments.

were mode confident in the ability of the eOAR to prevent falsification of assessment compared with hospital mentors.

were more positive regarding the accessibility features of MyProgress app including the usefulness of the spellcheck, changing the background colour on the screen, use of speech to text facility on the tablet the ability to edit assessment, the ability to type rather than handwrite feedback and improved legibility of typed document. were more confident in the security of assessment storage on MyProgress.

As identified in 8.1 primary care and community health trusts have been more digitally advanced than hospitals for over a decade (Department of Health, 2016; Kings Fund 2016). This may be the reason why the appears to be greater societal acceptance of the eOAR among the community mentors compared with the hospital mentors. Within the community setting the eOARs legitimacy was more widely accepted by mentors. The hospital mentors, in this case study, all worked at Cambridge University NHS Hospital Trust which moved to the EPIC paperless system a year before the implementation of the eOAR. The adoption of EPIC had not gone well, resulting in a major incident, a highly critical CQC report and the resignation of Keith McNeil the Chief Executive over the financial fallout. The trust was put in special measures as a result (Stevens, 2017). This will have affected the views of mentors, within CUH, regarding the use of mobile technology.

Increased societal acceptance of digital technology in general, is likely to make to make the legitimacy of further digital innovations more plausible. Readiness of a clinical area for adoption of an eOAR is therefore an important consideration for roll out and where digital technology is not currently used more training and support will be needed.

The environment in CUH and view of EPIC has changed dramatically with the Trust winning awards and others following in their footsteps (CUH 2022). Keith McNeill went on to be appointment as the first Chief Clinical Information Officer for NHS England. It was a hard road with significant fallout but now the Trust would not consider returning to paper.

Being the first to widely adopt an app based eOAR for student nurses has been particularly challenging personally and for the students, mentors and academics involved. For those following, the path will be easier because there will be greater societal acceptance not only because it has been done before but also because many of Hospital Trusts have, during the Covid-19 pandemic, caught up with the digital innovations adopted in primary care.

Finishing this PhD following the impact Covid-19 I am cognisant that societal acceptance of digital innovations within the NHS has broken down barriers. The chief clinical information officer at Calderdale and Huddersfield NHS Foundation Trust sums up the scale of the change.

"It's a scale of change that should not be underestimated it is not just clinicians whose attitudes have been changed. Patients had become more comfortable with digital too."

Graham Walsh (2021)

11.5 Recommendations for practice

Given the number of academics, mentors, and students that were disrupted by the transition to digital practice assessment, a crucial point to explore is whether it was appropriate to disrupt the status quo. There was, without question a chance of failure. It should be highlighted, however, that this was deemed acceptable since practice assessment was already badly fragmented (as described in section1.5); the disruption was justified by the prospective advantages.

Recommendation 2: Alignment

There is a need to bring about a shared vision of the duality of participation and reification for students, mentors and academic assessors. This is essential regardless of whether using digital or paper practice assessment of student nurses since, as discussed in 11.4.2, the consequence of this absence of alignment are the symptoms of the fractured assessment process. To improve the quality of practice assessment and address concerns such as failure to fail, grade inflation, and incomplete or late assessments, it is necessary to restore the balance between participation and reification. The use of electronic assessment of practice offers a way of achieving this.

Guidance on minimum requirements for time spent with students by practice assessors providing formative and summative assessment feedback needs to be specified by the regulator (NMC). While the NMC (2018b) Standards for Supervision and Assessment, part two, sets out expectations of support and supervision of student nurses in practice by practice supervisors and assessors, there are no minimum expectations outlined for time spent providing formative or summative assessment. The NMC and Universities need to be clear about the distinction between facilitating clinical learning experiences and providing feedback on competence development and the relevance of both.

Recommendation 3: Brokering

The project lead implementing digital practice assessment for student nurses must be carefully selected. They must be able to negotiate legitimacy across the communities of practice in which the eOAR will be introduced. The project lead must be resilient, skilled in brokering, and able to cross the many boundaries of the constellations of practice. It is strongly recommended to involve the nursing community of practise from the outset in the creation and implementation of the eOAR.

The project lead needs to ensure that training is available for mentors both by face-to-face delivery and online via distance learning. Ongoing training and support should persist beyond the rollout of the eOAR. Before introducing an eOAR, students need to be prepared for change by helping them understand the limitations of a paper PAD and the necessity for change.

Recommendation 4: Digital literacy.

The taxonomy of specific digital abilities required to prepare students and mentors for the introduction of an app-based eOAR is provided in Section 10.3.8 and Figure 69. The analysis indicates that a bring your own device (BYOD) strategy is the most likely to be successful. At least fifty per cent of students did not utilise university-supplied tablets, and students felt more comfortable using their own devices.

11.6 Recommendations for Research

Further research on students' experience using an eOAR is required to strengthen the pedagogical research base. The research is limited to second and third-year students; students' experience in their first year would also be illuminating. As the eOAR has evolved over time and is now embedded within practice for all nursing students, research into the benefits and impact of adopting the eOAR over a longer period might yield new insight.

Having successfully introduced an eOAR, creating and testing a prototype of an intelligent version could potentially increase the support for nursing students in several ways; using artificial intelligence tools - use of sentiment analysis, for example, to detect signs of stress and anxiety, using an inference engine to support quick natural language access to

authoritative clinical knowledge and using a recommendation/rules hybrid engine approach to provide students with proactive guidance on their learning activities specific to their current placement.

11.7 Update of student nurse continuation since end of case study

On 17th March 2022, HESA (2022) published their non-continuation UK performance data for 2019/2020 entrants. The HESA data focuses on full-time, first degree, UK domiciled students only (HESA PI Table 3a). Compared to last year, ARU overall has decreased continuation rates to 84.8% on last year's performance, which is lower than the average all England rate, which increased to 90.2%. However, continuation rates for nursing courses remain above ARU and sector average. For example, for 2020/2021, the BSc Hons in nursing and midwifery courses had continuation rates of 92.4%, which is 9.7% above the ARU university average and 5.3% above the UK sector average for nursing and midwifery courses of 87.1 %.

This achievement is set against an increase of 60% in entrants in the Faculty of Health, Education, Medicine and Social Work onto full time degree courses over the last three years (Table 19). Most of these additional students are nurses. The intake of student nurses, for 2021/2022 was 1450 (up from 850 in 2020/21 and 500 in 2019/2020) (Anglia Ruskin University, 2022). Using the eOAR has supported ARU to increase student nurse recruitment significantly. It enabled the provision of enhanced support in placement for student nurses and mentors and to become the largest provider of healthcare education in the UK.

Year	2018/2019	2019/2020	2020/2021
HEMS entrants	1030	1220	1650

Table 19 Entrants to FHEMS 2018-2021

The introduction of the eOAR has enabled the introduction of apprenticeship courses, which also have above sector average continuation rates (see table 20).

2018/2019	2019/2020	2020/2021
91.3%	93.8%	92.4%
89.3%	94.1%	90.9%
94.4%	92.1%	93.8%
93%	96.6%	97.8%
Course not	100%	83.3%
developed		
100%	93.8%	100%
	2018/2019 91.3% 89.3% 94.4% 93% Course not developed 100%	2018/2019 2019/2020 91.3% 93.8% 89.3% 94.1% 94.4% 92.1% 93% 96.6% Course not developed 100% 100% 93.8%

Table 20 Update on continuation rates for ARU Nursing Courses from 2018 to 2020/2021

11.8. Impact, Implications and final word

The research undertaken in this thesis has influenced the National Agenda for the adoption of electronic practice assessment of student nurses. Several universities wanting to replicate this work have actively sought advice, including Robert Gordon (Aberdeen), Edinburgh Napier, Essex, Hertfordshire, Cardiff, Southampton and De Montfort. The PAN London group of 17 Universities adopted the use of MyProgress in Sept 2020, along with Southampton University. Upon submission of this thesis, 23 Universities were using MyProgress for the practice assessment of student nurses or midwives. The support provided has included running train the trainer sessions and hosting vision visits for others to see our work at Anglia Ruskin.

Other Universities have endorsed this research.

"Looking back, I'm so grateful to you, and I'm sure that I also speak for the team in RGU Aberdeen in

terms of the trail you've helped blaze for us with MyProgress."

Mike Johnson, Cardiff University.

"I have explained how marvellous you all are and how ARU have taken e-PADs to a new level."

Ian Randle, Associate Dean (Practice Enhancement), University of Hertfordshire.

"Very impressive what you have achieved with regard to digital technologies and the e-PAD at Anglia Ruskin University."

Jane Fish (Project Manager Pan London Practice Assessment Document)

In 2019, I was appointed as digital advisor to the PAN London Consortium of 17 Universities seeking to adopt an eOAR for their student nurses. I provided strategic advice on how to roll out an eOAR for student nurses to a meeting of all the 17 Deans of the Schools for Health with the PAN London Group

In addition to its scalability at a national level, an electronic Practice Assessment platform has a substantial global relevance for supporting student nurses and other healthcare programmes around the world. Electronic practice assessment tools like MyProgress are vital, particularly in a sector where attrition rates are typically high in the UK and globally. Over three years, the wider project in which this research sits and I led attracted £450,000 of development income from Health Education England.

11.8.1 Post PhD growth in the use of the eOAR.

After the completion of the SEA project and my PhD case study, the use of the electronic practice assessment has increased exponentially. In September 2020, an updated version of the electronic practice assessment app for students with a new interface and mapping to the NMC standards for pre-registration nursing programmes (NMC 2018a) was released. Influenced by the findings of this thesis and additional collaboration with MyKnowledgeMap, this upgraded platform includes numerous enhancements. By January 2022, fourteen other HEIs affected by the COVID-19 pandemic had adopted the eOAR (see figure 5 below) (MyKnowledgeMap, 2022]. Additional HEIs are in various stages of adopting the eOAR later in 2022. In addition, four other healthcare professions, nurse associates, paramedics, midwives and physiotherapists now utilise the eOAR.



Figure 72 Timeline adoption of eOAR across the UK

In 2019 the eOAR developed as a result of this research won one national award, the E-Assessment Association' Innovation of the Year' and one international award - gold award for 'Best Learning Technologies – Public and Non-Profit Sector' at the learning technologies award, London. Prior to this it gained commendations from Health Education England (East) (for enhancing the digital literacy of our students and for supporting student success in assessment) and the Nursing and Midwifery Council (for partnership working). The contribution this research has made to designing and implementing an eOAR and data showing how this, in turn, supported timely formative assessment and promoted studentmentor engagement with the actual practice assessment has been recognised through the researcher being awarded a National Teaching Fellowship in 2020. In Sept 2020, this initiative was shortlisted for the Time Higher Education 'Technological or Digital Innovation' of the year award.

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Appendices

Appendix 1 Anglia Ruskin University Placement Providers

Placement Providers	Placement Providers
EOE AMBULANCE TRUST	Orsett Hospital NELFT
LONDON AMBULANCE SERVICE	John Tallack Centre NELFT
LONDON AMBULANCE SERVICE HOSPITAL	Poters Avenue Health Centre NELFT
BEDFORD HOSPITAL BHT	Julia Engwell Health Centre NELFT
ESSEX PARTNERSHIP UNIVERSITY NHS FT BEDS	Barking Community Hospital NELFT
Milton Keynes University Hospital	The Jane Atkinson Health and Wellbeing Centre NELF
BEDFORD HOSPITAL NHS TRUST	Baddow Village Surgery PROV
Milton Keynes University Hospital NHS Trust	Halstead Hospital Rehab PROV
HINCHINGBROOKE HOSPITAL CPFT AD	Witham Health Centre PROV
PAPWORTH HOSPITAL NHS FOUNDATION TRUST	Moulsham Lodge Clinic PROV
HINCHINGBROOKE HOSPITAL CCS	Orsett Hospital PROV
PAPWORTH HOSPITAL PAP	COLCHESTER HOSPITAL UNIVERSITY NHS FT
HINCHINGBROOKE HOSPITAL CPFT MH	LISTER HOSPITAL ENH
HINCHINGBROOKE HOSPITAL NWAFT	Hertfordshire Partnership University
PRINCESS OF WALES, ELY CUH	Lexden Hospital
PRINCESS OF WALES, ELY CCS	EAST AND NORTH HERTFORDSHIRE NHS TRUST
PRINCESS OF WALES, ELY CPFT AD	Hertfordshire Partnership University NHS FT
PRINCESS OF WALES ELY CPFT MH	GLENFIELD HOSPITAL UHL
NORTH CAMBRIDGESHIRE HOSPITAL CPFT AD	UNIVERSITY HOSPITALS OF LEICESTER NHS TRUST
NORTH CAMBRIDGESHIRE HOSPITAL CPFT MH	BARKING COMMUNITY HOSPITAL NELPFT Lnd MH
STAMFORD AND RUTLAND HOSPITAL NWAFT	CHASE FARM HOSPITAL RFT
DODDINGTON HOSPITAL CPFT AD	LUTON AND DUNSTABLE HOSPITAL LDFT
DODDINGTON HOSPITAL CPFT MH	ROYAL FREE HOSPITAL RFT
NORTH CAMBRIDGESHIRE HOSPITAL CCS	NORTH EAST LONDON PARTNERSHIP FT (NELFT LND MH)
PETERBOROUGH CITY HOSPITAL NWAFT	NORTH EAST LONDON PARTNERSHIP FT (NELFT LND AD)

Placement Providers	Placement Providers
DODDINGTON HOSPITAL NWAFT	QUEENS HOSPITAL BHRUH
JOHNSON COMMUNITY HOSPITAL	GUY'S HOSPITAL
LINCOLNSHIRE PARTNERSHIP NHS FOUNDATION TRUST	WEST MIDDLESEX UNIVERSITY HOSPITAL
St George's Hospital Lincoln LPFT	THORPE COOMBE HOSPITAL
Pilgrim Hospital LPFT	Whittington Hospital
Johnson Community Hospital LPFT	GOODMAYES HOSPITAL NELFT LND MH
Stamford Rescue Centre LPFT	LONDON SOUTHBANK UNIVERSITY HOSPITAL
LINCOLNSHIRE COMMUNITY HEALTH SERVICES NHS TRUST	UNIVERSITY COLLEGE HOSPITAL UCHL
ADDENBROOKES HOSPITAL CUH	Frimley Park Hospital
BROOKFIELDS HOSPITAL CCS	BARKING HOSPITAL NELFT LND
BROOKFIELDS HOSPITAL CPFT AD	Hammersmith and Fulham NHS Trust
ROSIE MATERNITY HOSPITAL CUH	Barts Hospital
BROOKFIELDS HOSPITAL CPFT MH	Barnet, Enfield & Haringey MH NHS Trust
FULBOURN HOSPITAL CPFT MH	King's College Hospital
ADDENBROOKES HOSPITAL CPFT MH	Redbridge Health and Social Care NELFTLNDMH
IDA DARWIN HOSPITAL CPFT MH	Goodmayes Hospital NELFTLNDMH
FULBOURN HOSPITAL CUH	Queen's Hospital NELFTLNDMH
NORTH WEST ANGLIA NHS FOUNDATION TRUST (H)	Broad Street Centre NELFTLNDMH
NORTH WEST ANGLIA NHS FOUNDATION TRUST	King George Hospital NELFTLNDMH
CAMBRIDGE UNIVERSITY HOSPITALS NHS TRUST	The Acorn Centre NELFTLNDMH
CAMBRIDGESHIRE AND PETERBOROUGH NHS FT ADULT	LUTON AND DUNSTABLE UNIVERSITY NHS FOUNDATION TRUS
CAMBRIDGESHIRE AND PETERBOROUGH NHS FT MH	ROYAL FREE LONDON NHS FOUNDATION TRUST
CAMBRIDGESHIRE COMMUNITY SERVICES NHS TRUST	BARKING HAVERING & REDBRIDGE UNIVERSITY HOSPITALS
PRINCESS OF WALES, ELY NWAFT	CHELSEA & WESTMINSTER NHS FOUNDATION TRUST
LINCOLN COUNTY HOSPITAL	GUY'S AND ST. THOMAS' NHS FOUNDATION TRUST
Hinchingbrooke Hospital	Whittington Hospital NHS Trust
Histon Police Station CPFTAD	LONDON SOUTHBANK UNIVERSITY NHS FT

Placement Providers	Placement Providers
Brookfields Health Centre CPFTAD	University College Hospital London
Sawston Health Centre CPFTAD	Guy's and St Thomas' NHS Foundation Trust
City Care Centre CPFTAD	Frimley Health NHS Foundation Trust
Princess of Wales Hospital CPFT AD	West London NHS Foundation Trust
The Knowledge Centre CPFTAD	Barts Health NHS Trust
Botolph Community Health Centre CPFTAD	King's College Hospital NHS Foundation Trust
North Cambs Hospital CPFTAD	Camden and North London NHS Trust
Huntingdon Oak Tree Centre CPFTAD	Nursing & Midwifery Council upload dummy record
Healthy Living Centre CPFTAD	QUEEN ELIZABETH HOSPITAL KINGS LYNN
Doddington Hospital CPFTAD	NORFOLK AND NORWICH UNIVERSITY HOSPITAL NNU
Fulbourn Hospital CPFTAD	NORFOLK & NORWICH UNIVERSITY NHS FOUNDATION TRUST
Hinchingbrooke Hospital CPFTAD	THE QUEEN ELIZABETH HOSPITAL FOUNDATION TRUST
Union House CPFTMH	NORTHAMPTON GENERAL HOSPITAL
Newtown Centre CPFTMH	Kettering General Hospital
City Care Centre CPFTMH	NORTHAMPTON GENERAL HOSPITAL NHS FOUNDATION TRUST
Edith Cavell Centre CPFTMH	Kettering General Hospital NHS Trust
Peterborough City Hospital CPFTMH	QUEENS MEDICAL CENTRE NUH
Beech House CPFTMH	NOTTINGHAM UNIVERSITY HOSPITAL NHS TRUST
Chesterton Medical Centre CPFTMH	IPSWICH HOSPITAL IHT
City Health Clinic CPFTMH	WEST SUFFOLK HOSPITAL WSFT
Botolph Community Health Centre CPFTMH	IPSWICH HOSPITAL NHS TRUST
Demential Resource Centre CPFTMH	WEST SUFFOLK NHS FOUNDATION TRUST
The Recovery College CPFTMH	UNIVERSITY HOSPITAL COVENTRY CWFT
Long Sutton Medical Centre	UNIVERSITY HOSPITALS COVENTY & WARWICKS NHS TRUST
Bourne Health Clinic	NORTH MIDDLESEX HOSPITAL
Johnson Community Hospital LCHS	NORTH MIDDLESEX HOSPITALS NHS FT
LINCOLNSHIRE HOSPITALS NHS TRUST	BEDFORD HOSPITAL ISC

Placement Providers	Placement Providers
ST MICHAEL'S HOSPITAL MEHT	Independent Sector Bedfordshire
ST PETER'S HOSPITAL MEHT	Practice Hub Bedfordshire
HALSTEAD COMMUNITY HOSPITAL PROVIDE	FITZWILLIAM HOSPITAL ISC
ST PETER'S HOSPITAL PROVIDE	NORTH CAMBRIDGESHIRE HOSPITAL ISC
BRAINTREE COMMUNITY HOSPITAL PROVIDE	PETERBOROUGH CITY HOSPITAL ISC
BROOMFIELD HOSPITAL PROVIDE	Independent Sector North Cambs
BRAINTREE COMMUNITY HOSPITAL	North Cambs Hospital ISCBNO
MID ESSEX HOSPITAL SERVICES NHS TRUST	Fitzwilliam Hospital
PROVIDE	Peterborough City Hosp ISCBNO
BROOMFIELD HOSPITAL MSE	ADDENBROOKES HOSPITAL ISC
Mid and South Essex NHS FT Broomfield	IDA DARWIN HOSPITAL ISC
ANGLIAN COMMUNITY ENTERPRISE CIC	Independent Sector South Cambs
CLACTON & DISTRICT HOSPITAL ESNEFT	NUFFIELD HOSPITAL CAMBRIDGE ISC
COLCHESTER GENERAL HOSPITAL ESNEFT	Practice Hub Cambridgeshire
CLACTON & DISTRICT HOSPITAL ACE	Nuffield Hospital ISSC
ESSEX COUNTY HOSPITAL ESNEFT	Cambridge Manor Nursing Home
CLACTON AND DISTRICT HOSPITAL EPUT MH N	Etheldred House
FRYATT HOSPITAL ACE	PRIORY HOSPITAL ISE
EAST SUFFOLK AND NORTH ESSEX FOUNDATION TRUST	HCRG Care Group MID QUADRANT
IPSWICH HOSPITAL ESNEFT	Independent Sector Mid Essex
EAST SUFFOLK AND NORTH ESSEX NHS FOUNDATION TRUST	Priory Hospital ISESMD
ROCHFORD HOSPITAL EPUT SE	Springfield Hospital ISESMD
SOUTHEND GENERAL HOSPITAL MSE	Pheonix Hospital ISESMD
BROCKFIELD HOUSE EPUT MH S	HCRG Care Group NE QUADRANT
ESSEX PARTNERSHIP UNIVERSITY NHS FT SE	FRYATT HOSPITAL ISE
ROCHFORD HOSPITAL EPUT MH S	Independent Sector North Essex
SOUTHEND UNIVERSITY HOSPITAL EPUT MH S	The Oaks Hospital ISESNO

Placement Providers	Placement Providers
SOUTHEND UNIVERSITY HOSPITAL NHS FOUNDATION TRUST	The Oaks Nursing Home
Mid and South Essex NHS FT Southend	WELLSLEY HOSPITAL SOUTHEND ISE
THURROCK COMMUNITY HOSPITAL EPUT MH S	Independent Sector South East Essex
BASILDON & THURROCK UNIVERSITY HOSPITAL NHS FT	Wellsley Hospital ISESSE
KING GEORGE HOSPITAL GOODMAYES BHRUH	HCRG Care Group SOUTH QUADRANT
THURROCK COMMUNITY HOSPITAL NELFT	BRENTWOOD COMMUNITY HOSPITAL ISE
BASILDON UNIVERSITY HOSPITAL MSESW	KING GEORGE HOSPITAL ISE
BASILDON UNIVERSITY HOSPITAL EPUT MH S	SUTTON MANOR HOSPITAL ISE
BRENTWOOD COMMUNITY HOSPITAL NELFT	Independent Sector South West Essex
MAYFLOWER COMMUNITY HOSPITAL NELFT	Nuffield Hospital ISESSW
ORSETT HOSPITAL NELPFT	Spire Hartswood Hospital
BRENTWOOD COMMUNITY HOSPITAL PROVIDE	Spire Tunbridge Wells Hospital
NORTH EAST LONDON FT (NELFT)	Anisha Grange
THORPE COOMBE HOSPITAL NELFT	HOLLY HOUSE PRIVATE HOSPITAL ISE
ORSETT HOSPITAL SUH	SAFFRON WALDEN COMMUNITY HOSPITAL ISE
Mid and South Essex NHS FT Basildon	THE RIVERS HOSPITAL ISE
SAFFRON WALDEN COMMUNITY HOSPITAL EPUT WE	ST MARGARET'S HOSPITAL ISE
ST MARGARET'S HOSPITAL PAH	HERTS & ESSEX HOSPITAL ISE
ST MARGARET'S HOSPITAL EPUT MH N	HCRG Care Group WEST QUADRANT
PRINCESS ALEXANDRA HOSPITAL PAH	Holly House Private Hospital ISESWE
ST MARGARET'S HOSPITAL EPUT WE	The Rivers Hospital ISESWE
PRINCESS ALEXANDRA HOSPITAL EPUT MH N	Herts and Essex Hospital ISESWE
ESSEX PARTNERSHIP UNIVERSITY NHS FT WE	Independent Sector West Essex
PRINCESS ALEXANDRA HOSPITAL EPUT WE	RCH Brentwood Care Centre
HERTS & ESSEX HOSPITAL PAH	Marillac Care
THE PRINCESS ALEXANDRA HOSPITAL NHS TRUST	INDEPENDENT SECTOR ESSEX
ESSEX PARTNERSHIP UNIVERSITY NHS FT MH NORTH	LONDON INDEPENDENT HOSPITAL ISE

Placement Providers	Placement Providers
ESSEX PARTNERSHIP UNIVERSITY NHS FT MH SOUTH	NORTH MIDDLESEX UNIVERSITY HOSPITAL
BRAINTREE HOSPITAL MEHT	NUFFIELD HOSPITAL - BRENTWOOD ISE
GOODMAYES HOSPITAL NELFT	OAKS HOSPITAL ISE
Royal College of Nursing	SPRINGFIELD HOSPITAL ISE
The Lakes EPUTMHN	MOORFIELDS EYE HOSPITAL
The Linden Centre EPUTMHN	Independent Sector Hertfordshire
Kingswood Centre EPUTMHN	The Priory Kneesworth House Hospital
St Aubyn Centre EPUTMHN	Spire Hospital Harpenden
The Crystal Centre EPUTMHN	Herts and Essex Hospital ISH
Chelmsford and Essex Clinic EPUTMHN	WHITTINGTON HOSPTIAL ISE
Derwent Centre EPUTMHN	CHASE FARM HOSPITAL ISE
Brentwood Community Hospital EPUTMHN	Independent Sector London
St Margaret's Hospital EPUTMHN	Priory Hospital North London
Latton Bush Centre EPUTMHN	Spire London East Hospital
Chelmsford Prison EPUTMHN	Suttons Manor Hospital ISLND
Rectory Lane Health Centre EPUTMHN	King George Hospital
Brentwood Rescue Centre EPUTMHS	Circle Health Group
Knightswick Clinic EPUTMHS	NORFOLK AND NORWICH UNIVERSITY HOSPITAL ISC
The Resource Centre EPUTMHS	Independent Sector Norfolk
Harland Centre EPUTMHS	Independent Sector Northamptonshire
Canvey Primary Care Centre EPUTSE	Kettering General Hospital ISNN
Rochford Hospital EPUTSE	Woodlands Hospital ISNN
Leigh Primary Care Centre EPUTSE	St Andrews Hospital ISNN
Hockley Clinic EUPTSE	Independent Sector Nottinghamshire
Primary Care Centre EPUTSE	ST EDMUND'S HOSPITAL ISC
Kingsley-Ward Centre EPUTSE	Independent Sector Suffolk
Thundersley Clinic EPUTSE	St Edmunds Hosp ISSF

Placement Providers	Placement Providers
Latton Bush Centre EPUTWE	NECCG
St Margaret's Hospital EPUTWE	North East Essex CCG (SNEE ICB)
Rectory Lane Health Centre EPUTWE	Independent Sector MISC
Corringham Health Centre NELFT	VIRGIN AND BARNARDOS
Craylands Clinic NELFT	Priory Hospital KENT
South Ockendon Health Centre NELFT	Practice Hub Mid and South Essex
Billericay Community Hospital NELFT	Practice Hub Suffolk and North East Essex
Thundersley Clinic NELFT	Practice Hub Herts and West Essex
	Independent Sector Kent

Appendix 2 RAG rating from for mentor PAD feedback

<u>Personal Tutor</u> Review of General Completion of Practice Assessment Documentation (PAD 1 Form)

Please indicate via the scoring if the following have been completed in the PAD	Not completed	Completed but with limitations	Completed as required	Comments
Mentor status documented (LIVE)	1	2	3	
Induction completed on time	1	2	3	
Initial meeting with mentor evident and on time	1	2	3	
Learning contract completed	1	2	3	
Student Pledge completed by student and signed by mentor.	1	2	3	
Service user feedback completed	1	2	3	
Formative assessment of interpersonal skills completed and reasons for selection of skills documented	1	2	3	

Please indicate via the scoring if the following have	Not completed	Completed but	Completed as	Comments
been completed in the PAD		with limitations	required	
Advice provided on progress of cluster skills and areas for				
further development identified	1	2	3	
Action plan developed to reflect formative assessment				
	1	2	3	
Reasons provided at summative stage for selection of				
interpersonal skills.	1	2	3	
Reasons provided at summative stage for grades applied to				
cluster skills.	1	2	3	
TOTAL FOR EACH COLUMN				

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Personal Tutor Quality Review of Evidence of Mentor Decision Making

Evidence of appropriate decision making and support by mentor	Please circle response below			
	No	Sometimes	Always	Comments
Do reasons provided by the mentor for selection of formative interpersonal skills support their choice of				
interpersonal skills?	1	2	3	
In relation to cluster skills has the mentor provided formative comments that support student development?				
	1	2	3	
Do reasons provided by the mentor for selection of summative interpersonal skills support their choice of				
interpersonal skills?	1	2	3	
Does the evidence provided by the mentor at summative stage support the grades applied to summative cluster				
skills?	1	2	3	
Total for each column				
Total score out of 12 =				

Personal Tutor Name......Signature.....Signature.....

Please attach this form to the photocopies of the formative assessments, action plan and summative assessments submitted by the student and send to the Education Champion identified on previous page.

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Year	Stage	Project Team	Role	Funding and Source	No students	Device	Project development
2014	Pre-SEA	Siân Shaw	Senior Lecturer Project lead	£0	0	None	 Met MyKnowledgeMap at conference Wrote project proposal – submitted to Faculty Board Project funding not granted from Faculty budget– so I sought other sources of funding.
2015	Pre-SEA Two quality improvem ent pilots	Siân Shaw	Senior Lecturer Project lead	£3500 Anglia Learning and Teaching project awards	28 and 28	ASUS 8 -inch tablets provided by ARU to all students in cohort (£100 per unit)	 Submitted project proposal to Anglia Learning and Teaching March 2015 pilot 1; 28 first year (Jan 2014 cohort) Paediatric nurses in Essex Stopped after 2 days) Sept 2015 – Dec 2015 pilot 2 second year (Sept 2014 cohort) paediatric student nurses in Essex – ran for one trimester/placement
2016 to 2017	SEA project commenc ed	Siân Shaw	Acting Director Learning Teaching and Assessment. Project Lead, Lead Researcher, PhD Student	£100,000 Health Education	170	Samsung Galaxy 7- inch Tab £120 each)	 Submitted project proposal to HEE (East) for development of eOAR. SEA project commenced

Appendix 3 Summary of SEA Project

Year	Stage	Project	Role	Funding	No students	Device	Project development
		Team		and Source			
	Bounded Case Study (PhD research)	MSc Graduate Intern	Training of mentors in placement areas. Creation of training resources for students, academics and mentors. Learning Technician – Technical support, student and academic training and support. Support of mentors via helpdesk	England (East)		Tablets provided to students in cohort by ARU	 Enrolled on PhD and commenced doctoral research. Sept 2016. All Sept 2015 BSc Hons second year student nurses in Cambridgeshire added to eOAR (170 Students, Adult, Child, Mental Health)
		Sixth form summer intern 10 Digital	Digitised eOAR created automated helpdesk				

Year	Stage	Project	Role	Funding	No students	Device	Project development
		Team		and Source			
			Supported peers with digital literacy skill development to use tablets and simple problem solving Liaison between project team and students providing monthly feedback reviews Presented at local and National conferences				
2017 - 2018 -	Post Bounded Case Study/ Research	Sian Shaw MSc Graduate	SEA Project Lead/ Principle Investigator Director Learning and Teaching	£200,000 Health Education England (East)	750 Students (1st and 2nd years added) plus 170 original 2nd years (now	Samsung Galaxy 7- inch Tab £120 each) Tablets provided to	eOAR adopted by all first- and second-year students in Cambridgeshire on nursing courses including nursing associates, nurse apprentices, and RN masters students

Year	Stage	Project	Role	Funding	No students	Device	Project development
		Team		and Source			
	SEA Project	(substantive)	Student and academic technical support and		3rd year students).	students in cohort by ARU	Third year students in March cohort remained on paper PADs
	ongoing	Seconded Experience d mentor (Registered nurse) from Partner Trust	training in use of app Training and support of Mentors in placement				
2018- 2019	SEA Project ongoing – expansion to nursing students in Essex	Sian Shaw Academic Grade 7 project lead for Essex seconded post 1 year)	Overall Project Lead Equivalent to Deputy Head academic grade One post in Cambridge, one in Essex	£160,000 Health Education England (East)	About two thousand students	Bring your own device policy adopted	 All first- and second-year Essex Nursing Students added to eOAR. Third year students in Essex remained on paper PAD Final report on project to Health Education England East. SEA project concluded

Year	Stage	Project	Role	Funding	No students	Device	Project development
		Team		and Source			
		Two					
		learning					
		technicians					
2020	Business	One admin	Day to day management of	Funding	About three	Bring your	Developed eOAR for medical students
onwar	as usual	arade 3	deployment of eOAR	from faculty	thousand	own device	at ARU.
ds		grade e	assessments and	hudget	nurses/nurse	policy	
43				budget		policy	
			answening helpdesk queries		associates		
					and 100		
					medical		
					students		

Author and country	Purpose	Design / Sample Study Population / size	Platform / Device	Key findings/outcome
Bogossian and Kellett.(2010) Australia	To evaluate the use and perception of a clinical practice performance electronic portfolio (CPPeP)	Qualitative and quantitative Survey of third year student nurses on RN programme, all females. (n=42) and Clinical preceptors (n=36)	Clinical practice performance electronic portfolio (CPPeP) Computer	 69% of student students encountered barriers in using the CPPeP. Barriers included gaining access to computers, lack of internet access. Finding time to complete the assessment was an issue for both students and preceptors. Some students encountered negative staff attitudes from RNs when u computers. Students needed to justify actions when using a PC, perceiving staff were scrutinising their activities. Some students were frustrated by RNs who were reluctant or unavailable to act as clinical preceptors 71.5% of students accessed their portfolio at home 'easier', 'more convenient.' 88% of students preferred e-portfolio over paper Both preceptors believed that the CPPeP facilitated students' integration of theory and practice and motivated the students to complete the e-portfolio.
Garrett, MacPhee and Jackson. (2013) Canada	To evaluate the implementatio n of an electronic e- portfolio for the	Mixed methods, Qualitative and Quantitative. Action Research Survey of	PeP bring your Own device (iPhone, iPAD, iPod and other)	 Instructors valued the e-portfolio convenience, improved transparencies and ability to track student progress, enhanced theory-practice links and competency-based framework Students valued accessibility, convenience. Concerns over assessment data openness, and process for standardisation. Both groups felt that the e-portfolio navigation required simplification

Appendix 4: Summary of eAssessment research Studies
Author and	Purpose	Design / Sample	Platform /	Key findings/outcome
country		Study Population	Device	
		/ size		
	assessment of clinical competence (PeP)	2 nd year student nurses (n=36) Survey of clinical instructors (n=18) Google tracking data analytics Follow up focus groups Students n=10 Instructors n=8		 Google analytics usage peaked at start and end of clinical placements. Average visit 12 ½ minutes 67% of instructors believed that access to prior course assessments was valuable they liked being able to see the student development from the start of the course while only 33% of students though it a good thing. Ease of access to students' competency assessment data raised many concerns for students with respect to transparency, trust, privacy and student rights to confidentiality.
Smith and	To explore	Qualitative and	An electronic	All Students' self-reported confidence with the eOAR increased, after hoth placements
Cambers	mentors' and	Quantitative	equivalent of the	 Mentors' confidence fell after the first placement. After the second
(2017)	student		paper-based	placement n=3 students and n=3 mentors reported increased confidence with IT skills. N=1 mentor reported reduced confidence.
Scotland	experiences of moving from paper-based to	Pre and post placement surveys of 1 st year mental health student	achievement record (eOAR). Computer	 Mentors expressed anxieties about the system navigation and the time required. Main barrier was the lack of access to computers connected to the internet in the practice environment. This was seen as a barrier to upscaling. Privacy was an issue with the computer in the main ward area.

Author and	Purpose	Design / Sample	Platform /	Key findings/outcome
country		Study Population	Device	
		/ size		
	electronic documentation	nurses (n=4) and their mentors (n=4) (from a class of 40)		 Some mentors were provided with additional support from the students.
Morgan and Dyer (2015) England	To evaluate the e- Assessment of Professional Practice (eAoPP).	Pre-Registration student nurses and midwives No details of data collection methods or sample.	No details	 Reduced the work for academic staff, better administration Increased security Allows tracking of the students' progress in practice Role in quality assurance of placement experiences Digital record clearer than handwritten scripts
Mackay, et al. (2017) New Zealand	To describe the process of introducing teaching innovation, and to explore clinical nurse lecturer	Qualitative Collaborative enquiry 6 clinical lecturers (Focus group and reflective journals)	No details iPADs	 Constraining factors: Societal barriers. Clinical staff engagement and lecturer experience with technology. Negative perceptions of clinical staff. It was seen as a social device and not an educational tool. One of the lecturers provided an example: Positive –Connectivity to a range of resources. Problems when wireless Enhanced students' critical thinking – deep learning using a range of learning styles (auditory, kinaesthetic and visual). Lecturers believed that learning alongside the students changed the powerbase in the learning, teaching interactions.

Author and	Purpose	Design / Sample	Platform /	Key findings/outcome
country		Study Population	Device	
		/ size		
	perceptions and experience of the use of mobile smart devices to support student learning.			
Dearnley, et al. (2008) England	To identify the issues of using mobile technologies in the assessment of health and social care	Qualitative and Quantitative Case Study 29 first year Student midwives and (4 withdraw later). Three focus groups	Assessment and Learning in Practice Settings (ALPS), PocketPC	 45% of students did not regularly take the PocketPC with them into clinical practice. Student anxiety about losing the device or material stored within it proved to be a major constraint. Some students lost data by allowing the batteries to completely run down. They were not synchronising the data to their own computer. Reverted back to paper. Students saw the project as time-limited so did not invest time in learning how to use the device. Students -Typing up information took too long on Pocket PC. Device too small. Lecturing staff found that synchronising the device with the University electronic diary system was extremely useful

Author and	Purpose	Design / Sample	Platform /	Key findings/outcome
country		Study Population	Device	
		/ size		
	students in practice	(8 students per group) 5 lecturers from the midwifery programme, Individual interviews Survey Midwives n=24 Lecturers n=4		 Clinical staff approached the change with varying levels of acceptance or dismissal. From the student perspective many mentors appeared reluctant to engage in the process. Introducing mobile technology into the clinical setting will require a significant shift in culture and a significant level of training and support. Some students reported that practice mentors had told them not to get the PocketPC out in front of clients;
Black, et al.	What are the	Qualitative	Android tablets	Students believed that being in a study resulted in them having to
(2014)	lecturer's and	Pilot study	PebbleOAR	do more than other students on their course.Students implied that if all students in the cohort had been given a
England	students'			tablet and this was normal practice this would have removed the
	experiences of			 Burden on mentors / workload

Author and	Purpose	Design / Sample	Platform /	Key findings/outcome
country		Study Population	Device	
		/ size		
	using PebbleOAR to record the students' ongoing achievement record using hand-held tablets?	First year student nurses n=6. focus group Lecturing staff n=5 focus group		 Students had insufficient digital literacy. Fear of new technology. Mentors also varied in technological literacy Students and mentors felt that Pebble PAD was not compatible with the OAR. Android devices substandard. Clunky and not responsive. No WI-FI access in placement
Li, et al. (2019) Hong Kong	Evaluation of mobile learning for the clinical practicum in nursing education: application of the FRAME model	Qualitative andQuantitative3rd and 4th yearundergraduatestudent nursesn=265SurveyTwo focus groupsn=20 (10 in eachgroup)	Bespoke Mobile App iPod Touch	 Assessment of binary outcome achieved/not achieved limited flexibility in the assessments. Increase efficiency of data collection. Increased access to student assessment for course coordinator releasing them from considerable workload Mentors took time to adapt Students received more immediate feedback from mentors Training important for success Did not want a larger device as liked portability. Liked the devices but wanted more training iPod touch did not have 3G/4G. Students had to connect to the internet via Wi-Fi on their own phones. Needed to use two devices Fear of losing and breaking devices.

Author and country	Purpose	Design / Sample Study Population / size	Platform / Device	Key findings/outcome
Collins, et al. (2019) New Zealand	To evaluate nursing students' perspective on e-portfolios compared with paper-based experiences	Qualitative Final year undergraduate student nurses n= 10 (from a cohort of 44) 3 focus groups	Pathbrite through the institutional learning management system	 Four key themes Ease of use/convenience Feedback Transparency Supporting technology

ain Research Question	Qualitative research questions	Quantitative research questions	Relevant mentor survey sections	Data Analytics Quantitative
1. What was considered legitimate practice in completing the student nurse paper version of practice assessment documents (PAD)? Was there divergence from legitimacy identified by the personal tutors and what was the nature of this divergence?	 How is legitimacy described and/or identified by students, mentors and academics? Identify if it is considered legitimate by students and/or mentors for formative practice assessments not to be completed on time and, if so, why? 	• How many students complete their formative practice assessments on time?	Time taken to complete assessments	
2. How can electronic practice assessment become legitimate?	 What aspects of the user's experience (student, mentor, tutor) of the eOAR facilitate legitimacy? What differences (if any) in attitudes towards the eOAR between the community and hospital settings emerge from the data? 	• Did the introduction of the eOAR increase the number of students completing their formative practice assessments on time?	 Being digital Experience of MyProgress training Comparing MyProgress to Paper Practice Assessment Final thoughts 	Student engagement data from MyProgress

ain Research Question	Qualitative research questions	Quantitative research questions	Relevant mentor survey sections	Data Analytics Quantitative
3. Why is electronic practice assessment challenging to introduce in the learning landscape/community of practice?	 What aspects of the user's experience (student, mentor, tutor) contribute to different attitudes towards the eOAR? What aspects of the process of completing the electronic ongoing achievement record did the mentors, student and tutors find challenging? Why do some students, mentors and/or tutors prefer the paper ongoing achievement record to the digital one? 	 Did the mentors in hospital and community settings score differently on digital literacy and attitudes towards the eOAR on the survey? How long does it take to complete the digital practice document compared to the paper version? 	 Being digital Experience of MyProgress training Time taken to complete student assessments Ease of using MyProgress Specific issues Final thoughts 	
4. What factors contributed to the successful introduction of electronic practice assessment into the community of practice?	• How do the students, mentors and tutors use the EOAR to complete the practice assessment?	• What percentage of students complete the eOAR on tablets compared to those who complete it on a computer?	 Benefits of MyProgress Ease of using MyProgress Enhanced learning needs. Support for MyProgress Sign off mentor 	Data analytics MyProgress device usage

ain Research Question	Qualitative research questions	Quantitative research questions	Relevant mentor survey sections	Data Analytics Quantitative
5. What, if any, benefits can an electronic on- going achievement record offer for tracking student progression / formative assessment/ assessment governance that cannot be achieved using paper documents?	 How do tutors and mentors use the eOAR to track student progress and provide feedback/feedforward? Identify if and how the eOAR can improve accessibility in completion of the practice assessment for students with additional learning needs? 	 Did the attrition rate of student nurses decrease following the introduction of the eOAR? Were a higher number of formative assessments completed on time? 	 Benefits of using MyProgress Comparing MyProgress to paper practice assessment Enhanced learning needs Final thoughts 	Student success data from DAP/Astra
6. How can digital practice assessment be used to bridge the divide between the University and placement?	 How do mentors, students and tutors use the EOAR to communicate and/or interact? What, if any, features of the eOAR improve the link between theory and practice? 	• How many mentors use a range of features of the tablets and/or MyProgress app to enhance student learning and bridge the theory-practice divide?	• Additional uses for the tablet	

Appendix 6: NHS Research Authority, do I need NHS REC approval?

Go	strai	ght	to	conte	nt.
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Medical Research Council	NH Health Research Author
To print your result with title a Title of your research:	and IRAS Project ID please enter your details below
A qualitative, evaluative case study of using r	nobile devices to assess nursing students' on-going achievement rec
IRAS Project ID (if available):	
Your answers to the following quapproval for sites in England.	uestions indicate that you do not need NHS REC However, you may need other approvals.
You have answered 'YES' to: Is	your study research?
You answered 'NO' to all of the	se questions:
Question Set 1	
. Is your study a slinical tria	

1-decisiontools.org.uk/ethics/EngresultN1.html

Result - England

- Does your study involve exposure to any ionising radiation?
 Does your study involve the processing of disclosable protected information on the Register of the Human Fertilisation and Embryology Authority by researchers, without consent?
- Is your study a clinical trial involving the participation of practising midwives?

Question Set 2

- Will your study involve research participants identified from, or because of their
 past or present use of services (adult and children's healthcare within the NHS
 and adult social care), for which the UK health departments are responsible
 (including services provided under contract with the private or voluntary sectors),
 including participants recruited through these services as healthy controls?
- Will your research involve collection of tissue or information from any users of these services (adult and children's healthcare within the NHS and adult social care)? This may include users who have died within the last 100 years.
- Will your research involve the use of previously collected tissue or information from which the research team could identify individual past or present users of these services (adult and children's healthcare within the NHS and adult social care), either directly from that tissue or information, or from its combination with other tissue or information likely to come into their possession?
- Will your research involve research participants identified because of their status as relatives or carers of past or present users of these services (adult and children's healthcare within the NHS and adult social care)?

Question Set 3

- Will your research involve the storage of relevant material from the living or deceased on premises in the UK, but not Scotland, without an appropriate licence from the Human Tissue Authority (HTA)? This includes storage of imported material.
- Will your research involve storage or use of relevant material from the living, collected on or after 1st September 2006, and the research is not within the terms of consent from the donors, and the research does not come under another NHS REC approval?
- Will your research involve the analysis of DNA from bodily material, collected on or after 1st September 2006, and this analysis is not within the terms of consent for research from the donor?

Question Set 4

 Will your research involve at any stage intrusive procedures with adults who lack capacity to consent for themselves, including participants retained in study

w.hra-decisiontools.org.uk/ethics/EngresultN1.html

Appendix 7: Medical Research Council, do I need IRAS approval?

NHS Health Research Authority
MRC Medical Research Council
To print your result with title and IRAS Project ID please enter your details below:
Title of your research:
A qualitative, evaluative case study of using mobile devices to assess nursing students' on-going achievement record.
IRAS Project ID (if available):
You selected:
 'No' - Are the participants in your study randomised to different groups? 'No' - Does your study protocol demand changing treatment/ patient care from accepted standards for any of the patients involved? 'No' - Are your findings going to be generalisable?
Your study would NOT be considered Research by the NHS.
You may still need other approvals.
Researchers requiring further advice (e.g. those not confident with the outcome of this tool) should contact their R&D office or sponsor in the first instance, or the HRA to discuss your study. If contacting the HRA for advice, do this by sending an outline of the project (maximum one page), summarising its purpose, methodology, type of participant and planned location as well as a copy of this results page and a summary of the aspects of the decision(s) that you need further advice on to the HRA Queries Line at HRA.Queries@nhs.net.
For more information please visit the Defining Research leaflet
Follow this link to start again.
Print This Page
NOTE: If using Internet Explorer please use browser print function.

Appendix 8a: Ethics approval focus groups and interviews



Anglia Ruskin University

11th March 2016

Dear Sian

Cambridge & Chelmsford

Cambridge Campus

East Road Cambridge CB1 1PT

T: 0845 271 3333 Int: +44 (0)1223 363271 www.anglia.ac.uk

Principal Investigator	Sian Shaw
DREP Number	SNM/DREP/15/006
Project Title	A qualitative, case study of using mobile devices to assess nursing students' on-going achievement record.

As you have now addressed the ethical issues, I am pleased to inform you that your ethics application has been approved by the Faculty Research Ethics Panel (FREP) under the terms of Anglia Ruskin University's Research Ethics Policy (Dated 23/6/14, Version 1).

Ethical approval is given for a period of three years from 11th March 2016.

It is your responsibility to ensure that you comply with Anglia Ruskin University's Research Ethics Policy and the Code of Practice for Applying for Ethical Approval at Anglia Ruskin University, including the following.

- The procedure for submitting substantial amendments to the committee, should there be any changes to your research. You cannot implement these amendments until you have received approval from DREP for them.
- The procedure for reporting adverse events and incidents.

- The Data Protection Act (1998) and any other legislation relevant to your research. You must also ensure that you are aware of any emerging legislation relating to your research and make any changes to your study (which you will need to obtain ethical approval for) to comply with this.
- Obtaining any further ethical approval required from the organisation or country (if not carrying out research in the UK) where you will be carrying the research out. Please ensure that you send the DREP copies of this documentation if required, prior to starting your research.
- Any laws of the country where you are carrying the research and obtaining any other approvals or permissions that are required.
- Any professional codes of conduct relating to research or requirements from your funding body (please note that for externally funded research, a Project Risk Assessment must have been carried out prior to starting the research).
- Completing a Risk Assessment (Health and Safety) if required and updating this annually or if any aspects of your study change which affect this.
- Notifying the DREP Secretary when your study has ended.

Please also note that your research may be subject to random monitoring.

Should you have any queries, please do not hesitate to contact me. May I wish you the best of luck with your research.

Yours sincerely,

Ehallis-Redwortan

Dr Edward Wallis-Redworth (Chair) For the Nursing and Midwifery Department Research Ethics Panel (DREP)

T: 0845 196 5504

- E: edward.wallis-redworth@anglia.ac.uk
- cc: Jeffrey Grierson/Sarah Redsell (DREP Reviewers) Beverley Pascoe (RESC Secretary)

Appendix 8b: Ethics approval data analytics

Re: Application for Ethical Approval

8th August 2017

Sian Shaw

Dear Sian.



Cambridge & Chelmsford

Cambridge Campus East Road Cambridge CB1 1PT

T: 0845 271 3333 Int: +44 (0)1223 363271 www.anglia.ac.uk

Reference Number	FHSCE-DREP-16-222
Project Title	A case study exploration of moving student nurses from paper to an electronic on-going achievement record
Principal Investigator	Sian Shaw

I am pleased to inform you that your ethics application has been approved by the Faculty Research Ethics Panel (FREP) under the terms of Anglia Ruskin University's Research Ethics Policy (Dated 23/6/14, Version 1).

Ethical approval is given for a period of 3 years from the 8th August 2017.

It is your responsibility to ensure that you comply with Anglia Ruskin University's Research Ethics Policy and the Code of Practice for Applying for Ethical Approval at Anglia Ruskin University, including the following.

- The procedure for submitting substantial amendments to the committee, should there be any changes to your research. You cannot implement these amendments until you have received approval from DREP for them.
- The procedure for reporting adverse events and incidents.
- The Data Protection Act (1998) and any other legislation relevant to your research. You must also ensure that you are aware of any emerging legislation relating to your research and make any changes to your study (which you will need to obtain ethical approval for) to comply with this.
- Obtaining any further ethical approval required from the organisation or country (if not carrying out research in the UK) where you will be carrying the research out. Please ensure that you send the DREP copies of this documentation if required, prior to starting your research.
- Any laws of the country where you are carrying the research and obtaining any other approvals or permissions that are required.
- Any professional codes of conduct relating to research or requirements from your funding body (please note that for externally funded research, a Project Risk Assessment must have been carried out prior to starting the research).
- Completing a Risk Assessment (Health and Safety) if required and updating this annually or if any aspects of your study change which affect this.
- Notifying the DREP Secretary when your study has ended.

Appendix 8c: Ethics approval mentor survey

14 September 2018





Cambridge & Chelmsford

Cambridge Campus East Road Cambridge CB1 1PT

T: 0845 271 3333 Int: +44 (0)1223 363271 www.anglia.ac.uk

Dear Sian,

Re: Application for Ethical Approval		
Principal Investigator(s)	Sian Shaw	
Project Number:	18/19/002	
Project Title:	A Case Study Exploration of Moving Student Nurses From Paper to Electronic Ongoing Achievement Records	

Thank you for your application for ethical approval which was considered by a sub-panel of the Faculty of Health, Social Care & Education Research Ethics Panel (FREP) on 12 September 2018.

Conditional approval is given provided you address the following:

- 1. Myprogress Mentor Survey The multiple options in Q3 are unclear. Ethnic group has been misspelled as ethic group in several instances.
- It would be helpful to consider data on ethnicity, and subsequent data on gender and disability, is actually required in the level of detail which has been requested. Such data, whilst it will be anonymised, is special category data. It should not be routinely collected, but only if it is central to the focus of the project.
- 3. In relation to the above point, if the data is required, some of the response categories could be improved and simplified. Rather than listing multiple options for disabilities and learning needs, it might be better to say (Q34): 'Do you have any difficulties using electronic tablets?' and if the answer is yes, to follow up with, 'If you are happy to do so, please outline your specific difficulty below'.
- 4. Various questions have rubric along the lines of the following: Please don't select more than 1 answer(s) per row; Please select at least 24 answer(s). This could potentially be confusing if it requires participants to count responses. Might it be simpler to say, 'Please don't select more than 1 answer per row. Please answer every question'?
- Q18, 19, 20, 21 Going from a 30 minutes option to hour categories is a little confusing and means there is no option to select 90 minutes, so these categories might need rethinking.
- Q27 & Q31 b1 are possibly loaded to favour positive responses to Myprogress. Please reverse some questions so that participants are also asked to agree or disagree with negatively worded statements or ones which favour paper-based approaches.
- The panel strongly recommends proof reading the survey before sending it out. Please pay particular attention to typos and sense errors/errors of expression.

It is not necessary for you to resubmit the application form but you should provide a written statement explaining how each of these issues will be addressed and updated versions of any amended documents for consideration by the Chair of FREP. These should be emailed to your sponsor in the first instance, Dr Susan Walker. Susan would be happy to advise you of the amendments and clarifications required and can be contacted on 01223 694663 or by e-mail at susan.walker@anglia.ac.uk.

Please note that under the terms of Anglia Ruskin University's ethics policy you must undertake not to commence your project until you have received full and complete ethics approval.

Please do not hesitate to contact me if you have any further queries regarding this matter.

Yours sincerely

Dr Sarah Burch For the Faculty (of Health, Social Care & Education) Research Ethics Panel

T: 0845 196 2560 E: <u>sarah.burch@anglia.ac.uk</u>

cc: Susan Walker (Sponsor)

Appendix 9 Response to conditional ethics approval

1st October 2018

Dear Susan,

Re: Application for Ethical Approval Principal Investigator(s) Siân Shaw

Project Number: 18/19/002

Thank you for your feedback from the sub-panel of the Faculty of Health, Social Care and Education Research Ethics Panel (FREP) on 12th Sept 2018.

Please note my responses below to the issues raised.

- 1. MyProgress Mentor Survey The multiple options in Q3 are unclear. Ethnic group has been misspelled as ethic group in several instances.
 - I have removed the multiple options and corrected the spelling errors.
- 2. It would be helpful to consider data on ethnicity, and subsequent data on gender and disability, is actually required in the level of detail which has been requested. Such data, whilst it will be anonymised, is special category data. It should not be routinely collected, but only if it is central to the focus of the project.
 - I have reduced and simplified the data collected on ethnicity, gender and disability. There is one question for each with no further branching questions. Some data around this area is essential as accessibility and widening participation are key elements in assessing the quality of higher education, particularly in relation to the TEF and the Office for Students.
- 3. Various questions have rubric along the lines of the following: Please don't select more than 1 answer(s) per row; Please select at least 24 answer(s). This could potentially be confusing if it requires participants to count responses. Might it be simpler to say, 'Please don't select more than 1 answer per row. Please answer every question'?
- Online surveys auto-populate this text with this wording if you want all questions answered. There is no way of changing this text.
- 4. Q18, 19, 20, 21 Going from a 30-minute option to hour categories is a little confusing and means there is no option to select 90 minutes, so these categories might need rethinking.
- The categories are:
 - o Less than 30mins
 - \circ 30 mins 1 hour
 - o 1hour 2 hours
 - o 2hours 4 hours
 - o 4-6 hours
 - o Greater than 6 hours.

I do not believe there is a need to have 90 minutes – do I then have 3 hours, 5 hours etc.? I do not believe that the mentors need to be that specific. To note this point does not affect the ethics of the research project. It is a comparison question comparing time taken on paper to complete the assessment compared to digital completion.

- 5. Q27 and Q31 b1 are possibly loaded to favour positive responses to MyProgress. Please reverse some questions so that participants are also asked to agree or disagree with negatively worded statements or ones which favour paper-based approaches.
- I have balanced these questions by adjusting some to be negatively worded.
- 6. The panel strongly recommends proof reading the survey before sending
 - The survey has been proof read by two independent academics, spelling and grammar corrections have been made.

I trust that this addresses the issues raised to the panel's satisfaction.

Regards

Inghow

Appendix 10: Participant information sheet student



A qualitative, evaluative case study of using mobile devices to assess nursing students' ongoing achievement record.

Section A: The Research Project

Introduction

My name is Siân Shaw; I am a Senior Lecturer in the Faculty of Health, Social Care and Education at Anglia Ruskin University. I would like to invite you to participate in a research study. This study involves your practice assessment and the app you are using on the tablet you have been loaned to complete your assessments on. In order for you to decide if you would like to participate it is important that you understand why the research is being undertaken and what you would be required to do. Please take time to read through the following information carefully.

The purpose of the study

As a Senior lecturer in the FHSCE I have been a personal tutor for many undergraduate student nurses. All of our student nurses, like you, spend 50% of their time in practice. I am interested in how Anglia Ruskin University can improve the practice assessment of our student nurses. This project, which is also part of my PhD degree at Anglia Ruskin University, is about exploring the way in which you are being assessed in practice using the MyProgress App on the tablets. I am interested in how successful the use of MyProgress is and what benefits students and mentors gain from using it. I am also interested in any challenges students and mentors encounter in using the app.

I am being supervised in undertaking this research by Dr Anne **Devlin** (anne.devlin@anglia.ac.uk) and **Dr Jaki Lilly** (Jaki.lilly@anglia.ac.uk).

Why have I been asked to participate?

All members of the Sept 2014 undergraduate nurses' cohort in Cambridgeshire are being asked if they would like to participate. This is because your cohort has all been loaned tablets and will be using MyProgress throughout the second year of the course.

How many people will be asked to participate?

Up to 5 students from each cohort (30 in total) will be asked to participate in focus groups.

The study will help us to gain useful information on how effective the use of MyProgress is for assessing students in practice. It is likely that your participation will help us make changes in how we use the assessment and make it as user-friendly as possible for students and mentors. For student nurses who volunteer to keep a digital diary a £20 Amazon voucher will be given on completion of the diary to compensate you for the time taken to complete it. Student nurses who participate in the focus group will be provided with a £10 Amazon voucher in compensation for the time taken.

Has the organisation where you are carrying out the research given permission?

Permission has been granted by the Heads of Department to undertake this research in the Faculty of Health, Social Care and Education. This permission is granted to approach students to participate in the research. It is your decision whether or not you would like to take part in the research.

Source of funding for the research.

This research is funded by Health Education England.

What will happen to the results of the study?

The results of this study will be written up and submitted for my PhD. The findings will also be submitted to conferences and journals for dissemination. A report on the outcomes will also be sent to Health Education England.

Contact for further information

Sian Shaw (sian.shaw@anglia.ac.uk)

Section B: Your Participation in the Research Project

What will I be asked to do?

If you agree to participate, you will take part in one focus group with other students from your cohort.

The focus group will be held on one of your course days towards the end of module 6 at the base where undertake your study. For Peterborough students this will be Guild House, for Cambridge students this will be East Road.

During the focus group you will discuss your experience of using the MyProgress app for your practice assessment. The researcher leading the focus group will use questions to prompt the discussion. The researcher will make notes and record the conversations. The focus group will last no more than 2 hours. The focus group will be video recorded, as this is a good way to capture the rich information that will be produced.

Will my participation in the study be kept confidential?

There is a difference between confidentiality and anonymity. The information in the focus groups is not anonymous as it will be possible to identify who you are from the raw data. Only the main researcher, Siân Shaw will, however, be able to see the raw data. Once received the information will be anonymised by substituting a numerical code for your name. Information will be shared with my supervisor, but this will be in the anonymised format. Your confidentiality will be safeguarded during and after the study. Every attempt will be made to ensure that it is not possible for others to identity you from any of the research that is published or shared with others as the results will be written up in an anonymised format. It is not possible however to guarantee complete anonymity, as it is possible that you may be identified by your colleagues or peers – but not by the general public.

Will I be reimbursed travel expenses?

If you incur travelling expenses specifically to attend the focus group then these will be reimbursed. You will not be reimbursed if the focus group occurs on a day you are also attending university for lectures, tutorial, skills or any other timetabled activity.

A £20 Amazon voucher will be given to each student who completes a diary in recompense for the time invested in undertaking this task, which is anticipated to be 2 - 3 hours monthly. A £10 Amazon voucher will be given to each student who participates in the focus groups.

Are there any possible disadvantages or risks to taking part?

I will be using quotes from participants in my dissemination. This increases the likelihood that you could be identified so you need to be aware of this. No personal or sensitive data will be included or disseminated.

In the event that poor practice is disclosed within the focus group it is expected that you will adhere to the Nursing and Midwifery Council Code of professional standards of practice and behaviour for nurses and midwives and nurse associates (2015). This means that you would be expected to share your concerns with an appropriate manager in the practice area and the Educational Champion / other member of the link team or personal tutor who would provide you with support and advice about an appropriate course of action. Guidance for this process can be found in the information section of your practice document. You should also note that, as an NMC-registered nurse, I must also adhere to the code and that participant confidentiality cannot apply if there is any risk of harm to patients/clients. The NMC states that nurses must.

"Act without delay if you believe that there is a risk to patient safety or public protection. To achieve this, you must: raise and, if necessary, escalate any concerns you may have about patient or public safety, or the level of care people are receiving in your workplace or any other healthcare setting and use the channels available to you in line with our guidance and your local working practices"

(NMC Code, p12 2015).

Your agreement to participate in this study does not affect your legal rights.

Can I withdraw at any time, and how?

You can withdraw from the study at any time before the data has been collected and submitted and without giving a reason. If you would like to withdraw from the study please email me to let me know. I will ask if you would like to withdraw from the study and have your data removed or to withdraw, but still be happy for me to use any anonymised data that has been collected up to that point. The decision to participate is entirely up to you and you do not have to participate in the focus group.

What will happen to any information/data/samples that are collected from you?

All the research information that you provide will be securely held until 2 years after the research is completed. This is to allow for time for publication. After this time all the research information will be destroyed. All personally identifiable information (e.g., consent forms) will be kept separately from the data under lock-and-key conditions. All students who participate in the research will be assigned a numeric code and any identifying information will be separated from this data at the earliest opportunity.

I will summaries my main findings and recommendations from the research in a short paper. After the study is completed I will provide you with a copy.

Contact details for complaints.

If you have any complaints about the study, then I would encourage you to speak to me (Sian Shaw) or my supervisor (Anne Devlin) in the first instance. Details about the Anglia Ruskin University complaints procedure can be obtained from:-

Email address: complaints@anglia.ac.uk

Postal address: Office of the Secretary and Clerk, Anglia Ruskin University, Bishop Hall Lane, Chelmsford, Essex, CM1 1SQ.

Version 3: 26th February 201

Appendix 11: Participant information sheet academics Section A: The Research Project

A qualitative, evaluative case study of using mobile devices to assess nursing students' ongoing achievement record.

Dear Colleague,

I would like to invite you to participate in a research study. This study involves an evaluation of the practice assessment and the MyProgress app that the Sept 2014 undergraduate nurses are using on the tablets they have been loaned. In order for you to decide if you would like to participate I have provided you with some information so that you understand why the research is being undertaken and what you would be required to do. Please take time to read through the following information carefully.

The purpose of the study

I am interested in how Anglia Ruskin University can improve the practice assessment of our student nurses. This project, which is also part of my PhD degree at Anglia Ruskin University, is about exploring the way in which students are being assessed in practice using the MyProgress App on the tablets. I am interested in how successful the use of MyProgress is and what benefits students; mentors and tutors gain from using it. I am also interested in any challenges students, mentors and tutors encounter in using the app.

I am being supervised undertaking this research by Dr Anne **Devlin** (anne.devlin@anglia.ac.uk) and **Dr Jaki Lilly** (Jaki.lilly@anglia.ac.uk).

Why have I been asked to participate?

All personal tutors for the Sept 2014 undergraduate nurses' cohort are being asked if they would like to participate. This is because you are directly involved with the cohort that has been loaned tablets and will be using MyProgress throughout the second year of the course.

How many people will be asked to participate?

All six personal tutors for the Sept 2014 cohort in Cambridgeshire are being invited to participate.

The study will help me to gain useful information on how effective the use of MyProgress is for assessing students in practice. It is likely that your participation will help us make changes in how we use the assessment and make it as user-friendly as possible for students, mentors and tutors.

Permission has been granted by the Head of Department to undertake this research in the Faculty of Health, Social Care and Education. This permission allows me to approach students and staff to participate in the research. It is your decision whether or not you would like to take part in the research.

Source of funding for the research.

This research is funded by Health Education England.

What will happen to the results of the study?

The results of this study will be written up and submitted for my PhD. The findings will also be submitted to conferences and journals for dissemination. A report on the outcomes will also be sent to Health Education England.

Contact for further information

Siân Shaw (sian.shaw@anglia.ac.uk)

Section B: Your Participation in the Research Project

What will I be asked to do?

I am inviting you to participate in a one-to-one interview. During the interview we will discuss your experience of using MyProgress during the Sept 2014 undergraduate nurses' placement for module 6 between February 8th, 2016, and 22nd July 2016. If you choose to participate I will arrange the interview to take place shortly after July 22nd. The interview will take place at a time and place convenient for you. This is likely to be Guild House for Peterborough academics and Young Street for Cambridge academics. I will book a private room for the interview.so that we are not disturbed. The interview should not take more than an hour.

During the interview I will ask you open-ended questions about your experience of using MyProgress. The interview will be audio-recorded in order to capture the rich data I hope it will provide.

Will my participation in the study be kept confidential?

There is a difference between confidentiality and anonymity. The information you will provide in the interview will not be anonymous, as it will be possible to identify who you are from the raw data. Only the main researcher, Siân Shaw will, however, be able to see the raw data. Once received the information will be anonymised by substituting a numerical code for your name. Information will be shared with my supervisor, but this will be in the anonymised format. Your confidentiality will be safeguarded during and after the study. Every attempt will be made to ensure that it is not possible for others to identity you from any of the research that is published or shared with others as the results will be written up in an anonymised format. It is not possible, however, to guarantee complete anonymity, as it is possible that you may be identified by your colleagues or peers – but not by the general public. I will not reveal which academics decide to participate in the research. Likewise, I will not reveal which academics decide to participate in the research.

Will I be reimbursed travel expenses?

I will undertake the interviews at your main work base so you will not incur any travel expenses.

Are there any possible disadvantages or risks to taking part?

I will be using quotes from participants in my dissemination. This increases the likelihood that you could be identified so you need to be aware of this. No personal or sensitive data will be included or disseminated. I will provide you with a copy of your interview transcript prior to analysis to ensure that it accurately reflects your opinions. You will be free to remove any information you feel does not accurately represent your thoughts prior to analysis and dissemination.

In the event that poor practice is disclosed within the interview it is expected that you will adhere to the Nursing and Midwifery Council Code of professional standards of practice and behaviour for nurses, midwives and nurse associates (2015). This means that you would be expected to share your concerns with an appropriate manager. You should also note that, as an NMC-registered nurse, I must also adhere to the code and that participant confidentiality cannot apply if I believe there is any risk of harm to patients/clients. The NMC states that nurses must.

"Act without delay if you believe that there is a risk to patient safety or public protection. To achieve this, you must: raise and, if necessary, escalate any concerns you may have about patient or public safety, or the level of care people are receiving in your workplace or any other healthcare setting and use the channels available to you in line with our guidance and your local working practices"

(NMC Code, p12 2015).

Your agreement to participate in this study does not affect your legal rights.

Can I withdraw at any time, and how?

You can withdraw from the study at any time and without giving a reason up to the point that my dissertation is written up for my PhD or the findings have been submitted for publication. If you would like to withdraw from the study please email me to let me know. I will ask if you would like to withdraw from the study and have your data removed or to withdraw, but still be happy for me to use any anonymised data that has been collected up to that point.

The decision to participate is entirely up to you and you do not have to answer any questionnaire or interview questions you do not wish to.

What will happen to any information/data/samples (delete as applicable) that are collected from you?

All the research information that you provide will be securely held until 2 years after the research is completed. This is to allow for time for publication. After this time all the research information will be destroyed. All personally identifiable information (e.g., consent forms) will be kept separately from the data under lock-and-key conditions. All tutors who participate in the research will be assigned a numeric code and any identifying information will be separated from this data at the earliest opportunity.

I will summarise my main findings and recommendations from the research in a short paper. After the study is completed I will provide you with a copy.

Contact details for complaints.

If you have any complaints about the study, then I would encourage you to speak to me (Sian Shaw) or my supervisor (Anne Devlin) in the first instance. Details about the Anglia Ruskin University complaints procedure can be obtained from:-

Email address: complaints@anglia.ac.uk

Postal address: Office of the Secretary and Clerk, Anglia Ruskin University, Bishop Hall Lane, Chelmsford, Essex, CM1 1SQ.

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Appendix 12: Consent form students

NAME OF PARTICIPANT:

Title of the project: A qualitative, evaluative case study of using mobile devices to assess nursing students' on-going achievement record.

Main investigator and contact details: Siân Shaw (sian.shaw@anglia.ac.uk)

Research Supervisors:

Anne Devlin (anne.devlin@anglia.ac.uk) Jaki Lilly (Jaki.lilly@anglia.ac.uk).

Focus Group

I agree to take part in the research above. I have read the Participant Information Sheet Version 3 26 February 2016. I understand what my role will be in this research, and all my questions have been answered to my satisfaction.

- 1. I understand that I am free to withdraw from the research at any time, without giving a reason.
- 2. I am free to ask any questions at any time before and during the study.
- 3. I understand what will happen to the data collected from me for the research.
- 4. I have been provided with a copy of this form and the Participant Information Sheet.
- 5. I understand that quotes from me will be used in the dissemination of the research
- 6. I understand that the focus groups will be video recorded.

Data Protection: I agree to the University¹ processing personal data, which I have supplied. I agree to the processing of such data for any purposes connected with the Research Project as outlined to me*

¹ "The University" includes Anglia Ruskin University and its Associate Colleges.

PARTICIPANTS MUST BE GIVEN A COPY OF THIS FORM TO KEEP ADD DATE and VERSION NUMBER OF CONSENT FORM.

I WISH TO WITHDRAW FROM THIS STUDY.

If you wish to withdraw from the research, please speak to the researcher or email them at sian.shaw@anglia.ac.uk stating the title of the research.

You do not have to give a reason for why you would like to withdraw.

Please let the researcher know whether you are/are not happy for them to use any data from you collected to date in the write up and dissemination of the research.

Appendix 12: Consent form academics

NAME OF PARTICIPANT:

Title of the project: A qualitative, evaluative case study of using mobile devices to assess nursing students' on-going achievement record.

Main investigator and contact details: Siân Shaw (sian.shaw@anglia.ac.uk)

Research Supervisors:

Anne Devlin (anne.devlin@anglia.ac.uk) Jaki Lilly (Jaki.lilly@anglia.ac.uk).

Interview

I agree to take part in the research above. I have read the Participant Information Sheet V2 14 February 201I understand what my role will be in this research, and all my questions have been answered to my satisfaction.

- 1. I understand that I am free to withdraw from the research at any time, without giving a reason.
- 2. I am free to ask any questions at any time before and during the study.
- 3. I understand what will happen to the data collected from me for the research.
- 4. I have been provided with a copy of this form and the Participant Information Sheet.
- 5. I understand that quotes from me will be used in the dissemination of the research
- 6. I understand that the focus groups will be video recorded.

² "The University" includes Anglia Ruskin University and its Associate Colleges.

PARTICIPANTS MUST BE GIVEN A COPY OF THIS FORM TO KEEP

ADD DATE and VERSION NUMBER OF CONSENT FORM.

I WISH TO WITHDRAW FROM THIS STUDY.

If you wish to withdraw from the research, please speak to the researcher or email them at sian.shaw@anglia.ac.uk stating the title of the research.

You do not have to give a reason for why you would like to withdraw.

Please let the researcher know whether you are/are not happy for them to use any data from you collected to date in the write up and dissemination of the research

Appendix 14: Email request to students

Dear Sept 2014 Students,

I hope that your practice placement is going well. I am interested in how you are finding using the tablets and MyProgress for your practice assessment. In order to help Anglia Ruskin University, make decisions about how we should progress with e-practice assessment I am undertaking some research about your experience. This research will also form part of my PhD. I have attached some information to this email about the research; please take time to read this.

I would be grateful if you would help me as I am hoping that we will be able to improve your and other student nurses' experience of practice assessment. Your participation will directly inform how we assess our students in practice. It is up to you if you decide to participate. None of your course leaders or tutors are involved as researchers in the project, although some will be asked if they would like to volunteer as participants. A decision not to participate will not have any impact on your studies.

Please respond with one of the replies below.

Yes - I am interested in participating. No – I am not interested in participating

If you need any further information please do contact me and I will be happy to help. Siân Shaw Researcher / PhD Student / Senior Lecturer FHSCE Young Street Anglia Ruskin University 0845 196 5511

V2 14 February 2

Appendix 15: Focus group schedule

A qualitative, evaluative case study of using mobile devices to assess nursing students' ongoing achievement record.

Focus Group Question Schedule

Bounded Case:

Nursing Students Sept 2014 Cambridgeshire in second year of training

Stage 1 Introduction (5 minutes)

Good morning / afternoon

My name is Sian Shaw and I'm one of the lecturers in the Faculty of Health Social Care and Education. Part of my role includes research. I am also a PhD student at the University and this focus group will form part of my PhD. I'm really pleased that you decided to come here today and help us with our study, thank you. We are going to ask you some questions about using e- assessment in practice. You have been invited to participate in this focus group because you have been using MyProgress for a few months on the tablets and we are interested in your experience of this. We are interested in what went well and what can be improved. We are having discussions like this with several groups of students.

Group agreements.

I would just like you to know that there are no right or wrong answers, only differing points of view. Please feel free to share your point of view even if it is different from what others have said. Keep in mind that we are interested in both positive and negative comments. You have probably noticed the camera; we're videoing the session because we don't want to miss any of your comments. People often say very helpful things in these discussions and we can't write fast enough to get them all down. As we are video recording it would be really helpful to take turns in speaking and for just one person to speak at a time. Is everyone happy for us to use their first name? We won't use any of your names in our reports. You don't need to agree with anyone else but it is important that we listen respectfully as others share their views. Can I ask that you please turn off your mobile phones, as they can be distracting? If you cannot

and if you must respond to a call, please do so as quietly as possible; just pop outside the room and re-join us as quickly as you can.

- Has everyone read the participant information sheet and signed the consent form?
- My role as moderator is merely to guide the discussion, so please talk to each other.

Ice Breaker (10 minutes)

Well, let's begin. Let's find out a little more about each other by going around the circle and introducing ourselves. Please give your first name and just for fun tell us what your favourite food to cook or eat is.

Transition – Now I'd like to talk a bit about the electronic practice assessment and the use of MyProgress.

Main Question Set 1: Overall impressions.

This set aims to explore the overall impression the students had of MyProgress and e-practice assessment.

- What were your first impressions of MyProgress when you were shown it in class?
- What are your impressions of e-assessment/ MyProgress now?

•

Main Question Set 2: How e-assessment is used.

The aim of this question set is to understand how students are using MyProgress / the tablets in practice and what is influencing their reasons for using it in this way.

- Can you say a little about the placement area that you have been working in?
- Can you please describe how you have typically used MyProgress / the tablets in practice?
- What are your reasons for using them in this way? (i.e., probe for reason why they favour a particular pattern of use.)
- Describe the experiences you've had in completing your e-practice assessment in placement or at home.
- What has been your experience of using the web-based desktop view of MyProgress?
- How did the people that you have been working with in practice use MyProgress / epractice assessment?
- How did your tutor use MyProgress?
Main question set 2: The aim of this set is to understand the benefits and challenges of using MyProgress / e-assessment

- What, if any, impact has the use of MyProgress e-assessment had on your learning?
- What, if any, benefits can you see in using MyProgress e-practice assessment
- Please can you describe anything that you can do with MyProgress e-practice assessment that is not possible with the paper document?
- What benefits do you think there are for your mentors?
- What obstacles have you had to overcome or have you heard about?
- Do you face any resistance to participation by anyone? If yes, where does it come from? Why?
- Given the different problems you mentioned, what do you think should be done to improve things? For example, do you need certain skills and ongoing support?
- Suppose that you could make one change that would make e-practice assessment better, what would it be?

Concluding questions.

Supposing you had one minute to talk to the Dean about MyProgress and e-practice assessment what would you say?

These are all the questions I have for you. Is there anything else you'd like to know about our project or about e-practice assessment?

Thank you for your time. It was a pleasure to meet all of you. Your answers will be very helpful as we move forward with this project. I will be writing a summary of the research, which I will share with you via email. We'll give you your gift certificates on your way out.

Useful General Prompts

- Tell me more about that?
- Can you help me understand that a little better?
- Please explain your response.
- Go on.
- What else do you have to say about...?
- Give me an example...

Siân Shaw

Sian.shaw@anglia.ac.uk: Ex 5511

V2 14th February 2016

Appendix 16: Head of department approval



Date Gumany 14th 2016.

Dear Sian

Student research

This is to confirm that I give permission for you to carry out research at our organisation for the purposes of your PhD at Anglia Ruskin University.

I understand that by giving this permission I am granting you the use and ownership of data collected.

I understand that you will write up the results for your degree.

I understand that you may disseminate findings at Anglia Ruskin University and elsewhere, including for publication.

I give permission for our organisation to be named in dissemination.

***** I do/do-not wish to see a summary of the findings prior to dissemination. If so, I understand that participants will be informed of this.

Yours sincerely

ATTREMUS MS

Name and Title of member of staff from organisation

DR. A. THOWHAG - 9 REGINEY

Domain	Quotation from student focus group	Quotation from academic interview	Help desk ticket raised by mentors	Corresponding survey item (s)
Mentor Training	"You'd offered a lot of training and it's just people hadn't taken it up, so it was hard to have the whole, you know, them complaining that they hadn't had training without thinking actually 'you were offered it but'"	"But the only main other sort of surprise is mentors because I know that the trust had been doing a lot of work to make sure that all mentors are aware of the of the new electronic assessment and they had put out all sorts of newsletters, all sorts. And then you were going, students were going out and mentors was this never heard of it"	"I cannot find my student completed assessment+ cannot find PDF version of the practice assessment document" "Can I save as a draft on the web-based account?"	What training did you receive to use MyProgress? Please describe the training that you received.
Students teaching mentors how to use the eOAR/ digital tablet	"When I started using it some mentors were like 'oh my god what are we doing with it?' so, I was just like, 'Right it's just the way you use your phone' so they liked the idea, and when they started using it they were just like 'Oh actually it's not that they did what they needed to do."	"A couple of them had experiences with students using the tablet and one of the mentors said that he found it really challenging because he was the expert and was expecting to mentor the student and he felt that he couldn't ask the student what to do."	"The tablets are time consuming, in having to teach mentors to use it if they were unaware"	How do you feel about students teaching mentors how to use MyProgress?

Appendix 17: Example mapping of qualitative data to construct the mentor survey

Domain	Quotation from student focus group	Quotation from academic interview	Help desk ticket raised by mentors	Corresponding survey item (s)
Length of time taken to complete eOAR	"And also, another advantage for the mentor was that, was that, when you're actually using the, it was quite quick when you're actually on the screen putting it all in, and that wasn't, that wasn't too bad I think from the time perspective."	"We make the assumption that mentors were completing the PAD correctly. So, the reality is, in practice, they don't sit down with the students. So, because they're not sitting down with the students, this (eOAR) is taking them longer, it's forcing them to stop and do it."		When using MyProgress overall how long did you spend working together completing the MyProgress/digital practice assessment documentation?
Barriers to adoption of eOAR	"And you know, there were some barriers in terms of, you didn't always have a computer when you needed it, at least in the beginning." "So, the battery, the charging, endless charging, 6 hours on the plug thing and it doesn't go anywhere, 2 hours later it's flat again.		"These tablets are slow and keep freezing and the battery life is very short'	How often did any of the following hamper your ability to complete the assessment on MyProgress? Lack of availability of computers in your work area Battery life of the tablet

Domain	Quotation from student focus group	Quotation from academic interview	Help desk ticket raised by mentors	Corresponding survey item (s)
Accessibility	and I've found it useful to check for understanding. I have dyspraxia, ADHD and OCPD to be able to talk about how it can be a useful tool to have a comprehensive assessment that's fairer	No data	"The Screen is too small on the tablet to type on"	How helpful were the following accessibility feature of MyProgress? The ability for students to prepare their documents ahead of meeting with their mentor. The ability to edit/ change/ delete text in the assessment Speech to text facility on tablet - so you do not need to write.

Appendix 18 Mentor Survey



MyProgress Mentor Survey Cambridgeshire Nov 2018

About this survey

Mentor Survey MyProgress

You are invited to participate in the MyProgress Mentor Survey. You have been invited participate because you have completed a student assessment using MyProgress.

This survey is being conducted by Anglia Ruskin University: Faculty of Health, Education, Medicine and Social Work.

The survey's aim is to evaluate mentor experience of using MyProgress and the software. It is not an evaluation of mentor performance or the performance of clinical areas.

Consent to Participate:

Completion and submission of the survey will be considered as consent to participate.

Your participation in this survey will contribute to a better understanding of the mentor experience of using

MyProgress. The data will be used by Anglia Ruskin University to develop the use of MyProgress and improve the mentor experience.

If you agree to participate:

The survey will take approximately 15 - 20 minutes of your time, although it could take longer depending on your answers. Participation will involve answering questions about a variety of topics about your experience of using MyProgress.

Confidentiality of Responses

Your privacy and the confidentiality of your data will be protected. Data collected will be stored on secure servers and raw data will only be accessible to the MyProgress Mentor Survey Research Team at Anglia Ruskin University.

Your responses will be connected to a limited set of demographic information in order to monitor and mitigate response bias or to facilitate analysis based on these factors e.g., Gender and Age. We also ask if you have any additional learning needs because we want to ensure that MyProgress is accessible for all mentors. If you prefer not to answer these demographic or disability questions please select the 'prefer not to respond' option.

The completed survey on Online Survey is hosted on the JISC online survey platform which is used by 130 UK universities. JISC takes its data protection responsibilities seriously. On the General Data Protection Regulations (GDPR) they have recently been audited and the auditor was impressed with their approach. Details of JISC's GDPR approach can be

found on their website www.jisc.ac.uk/gdp

Once you complete the survey you will be able to print a copy. You will also be issued with a survey number. This number identifies your response in the survey database. We are not able to identify who is linked with this number unless the person completing the survey provides us with their unique number. So, the survey is anonymous.

The survey does not seek to collect any unique identifying information such as your name or email address so your submission is anonymous. It is possible that you may be identifiable if you provide unique responses to discussion questions that reveal your identity. It will be possible to identify your work area. Identifying work areas will help us understand problems unique to specific Healthcare Trusts.

Only research team members will have access to the raw data within the Online Survey.

Research Team Members

Project Lead Cambridge: Siân Shaw : (Director Learning and Teaching, HEMS) sian.shaw@anglia.ac.uk Project Lead
Essex: Louise Jenkins (Deputy Head of School of Nursing, HEMS) Louise.Jenkins@anglia.ac.uk Project
Administrator: Claire Driver: Claire.driver@anglia.ac.uk

The data resulting from your participation will be used to inform development of MyProgress. The findings will be published in appropriate professional Journals and presented at relevant conferences. In these cases, the data will contain no identifying information that could associate it with you, or with your participation in this survey.

Supervision

This research also forms part of Siân Shaw's Ph.D. This work is supervised by Anglia Ruskin University. Any concerns about the research can be raised with her supervisor

Dr Jaki Lilly. Jaki.lilly@anglia.ac.uk Participation or Withdrawal

Your participation in this study is voluntary and you have the right to withdraw. If you do not want to participate, either simply

stop participating or close the browser window. You may decide not to participate at all.

Once you have completed and submitted the entire survey it will no longer be possible to withdraw your participation. This is because it is not possible to associate individuals with survey forms.

Non-participation will not affect your relationship with your Anglia Ruskin University in any way.

Questions about participation

If you have more specific questions about the survey or your participation please contact sian.shaw@anglia.ac.uk

Placement area details

Where is your placement?

Required

- C Cambridgeshire (Cambridge and Peterborough)
- Essex

Please identify your work area

Please select your work area

About you

What gender are you?
□ Required

Male

○ Female

- O Non-Binary/third gender
- ^O Prefer not to say

^C Prefer to self-describe

Please describe your gender

What is your ethic group? Choose one option that best describes your ethic group or background

Required

С	White
0	Mixed/Multiple ethnic groups
0	Asian/Asian British
0	Black/African/Caribbean/Black British
0	Arab
0	Other Ethnic Group
	Prefer not to answer

Other ethnic group: please describe yourself, or write prefer not to say in the box below

How long have you been a mentor for student nurses? Required

less than a year
1 year up to 2 years
3 years up to 5 years
Greater than 6 years
Greater than 10 years

Were you a mentor / sign off mentor for the Sept 2014 cohort using MyProgress in Cambridgeshire? This group was the first one to use MyProgress as second year students in Sept 2015 and graduated last year in Sept 2017.

⊙ Yes

O No

How old are you?
□ Required

20 - 30
 31 - 40
 41 - 50
 51 - 60
 Older than 60

Being Digital

How do you rate your computer skill level
Required?

- Never use a computer
- O Basic
- C Good
- C Excellent

What do you use a computer for?
□ Required

- O Work
- O Personal use
- C Work and personal use
- O Never use a computer

Do you own a tablet PC (e.g., IPAD, Android tablet)? Select all the devices you have D Required

- ☐ Yes Apple
- Yes Android
- ☐ Yes Microsoft
- □ No

Do you own a smart phone?

Required

C Yes

O No

What kind of smartphone do you own? Select all the devices that you own.



Please insert the type of smartphone you own below Optional

How confident are you in undertaking the following tasks on a tablet computer? □ Required

Please don't select more than 1 answer(s)

per row. Please select at least 24 answer(s).

Please don't select more than 24 answer(s) in any single column.

	Very confident	Quite confident	Not confident	Never done this
Switching a tablet on and off	Г	Г	Г	Г
Setting up a tablet	Γ	Γ	Γ	Γ
Using a blog	Γ	Γ	Γ	Γ
Adjusting the volume settings	Γ	Γ	Γ	Γ
Finding an app in the app store/google play store	Г	Г	Г	Г
Downloading/installing an app from the app store/google play store	Γ	Γ	Γ	Γ
Checking the version of an app	Γ	Г	Г	Г
Updating an app	Γ	Г	Γ	Γ
Connecting to Wi-Fi	Γ	Г	Г	Г
Searching for information on the web	Г	Г	Г	Г
Taking a screen capture	Г	Г	Г	Г
Syncing a tablet device	Г	Г	Г	Г
Changing the screen time out settings	Г	Г	Г	Г
Using the speech to text function on an apple tablet	Г	Г	Г	Г
Using the speech to text function on an android tablet	Г	Г	Г	Г
Adjusting the accessibility settings (e.g., screen font size/background colour, screen touch sensitivity).	Г	Г	Г	Г
Downloading and storing word/pdf documents	Γ	Г	Γ	Γ
Writing and editing documents	Г	Γ	Г	Γ
Taking a photograph	Г	Г	Г	Г
Post a message on social media e.g., Facebook, twitter, snapchat, Instagram	Г	Γ	Г	Γ

Uploading a photograph from a tablet to social media (e.g., twitter, snapchat, Facebook, Instagram, WhatsApp)	Γ	Г	Г	Г
Using SIRI or Alexa (digital personal assistants)	Γ	Г	Г	Г
Completing online registration forms (e.g., supermarket shopping / amazon / banking).	Γ	Г	Γ	Γ
Using predictive text	Γ	Г	Г	Г

Which

Γ	Computer	/	Desktop	at	

- work Computer/ Desktop
- □ at home Student's tablet
- Tablet (your own)
- Smartphone
- □ (student's)

platforms did you use to complete MyProgress (please tick all that apply) _ Required?

Your experience of MyProgress training

How many student nurses from Anglia Ruskin University have you mentored who have used MyProgress? *Required*

- O None
- One
- O Two
- C Three
- ^C More than three

What training did you receive to use MyProgress (please tick all that are relevant)?
Required

- □ Group training where I work, with trainer from Anglia Ruskin University
- Group training where I work, with training from my employer
- □ One to one training with trainer from Anglia Ruskin University
- Cone to one training with training from employer
- Conline training for mentors via Anglia Ruskin MyProgress training website
- ☐ Online training for mentors via Anglia Ruskin helpdesk
- I did not receive any training.
 - Other

Please describe the training that you received

Why did you not receive any training?

- I was not aware of any MyProgress training
- ^C The MyProgress training was not at a convenient time /
- ^C location I was too busy to attend the MyProgress training
- C The MyProgress training was not a priority at the time it was running
- I did not really think MyProgress would be used
- C I am digitally literate and thought I would be able to complete the assessment without needing training

Other (Please give reason below)

Please give details below of why you did not receive MyProgress training



Overall, how do you rate the quality of training you received to use MyProgress?
Required

- Inadequate
- Satisfactory
- Good
- C Excellent
- I did not receive any training

Please write below any additional information that you would like to provide about MyProgress training for mentors.

Did your student(s) contribute to teaching you how to use MyProgress D Required

□ Yes

□ No

How do you feel about students teaching mentors how to use MyProgress? Required

Please don't select more than 1 answer(s) per row. Please select at least 14 answer(s).

Please don't select more than 14 answer(s) in any single column.

	Strongly agree	Agree	Neutral	disagree	Strongl y disagre e
Students should be able to teach their mentor how to use MyProgress	Г	Г	Г	Г	Г
The students were confident in using MyProgress	Г	Г	Г	Г	Г
Students are not confident enough to teach mentors	Г	Г	Г	Г	Г
My student(s) were good at teaching me how to use MyProgress	Г	Г	Г	Г	Г
I feel comfortable with students teaching me digital skills / how to use MyProgress	Г	Г	Г	Г	Г

I feel threatened if students appear to be more digitally competent than I am	Г	Г	Г	Г	Г
I was worried about being embarrassed about my digital skills	Г	Г	Г	Г	Г
I did not feel confident to use the tablets with the students	Г	Г	Г	Г	Г
I prefer for the students to type all the information into the tablets, so I do not have to	Г	Г	Г	Г	Г
I would be impressed if students took the initiative in teaching me digital skills.	Г	Г	Г	Г	Г
I am excited about learning digital skills and would encourage the student to teach me.	Г	Г	Г	Г	Г

I think that it is inappropriate for students to be teaching mentors.	Г	Г	Г	Г	Γ
Students can be negative about MyProgress which would not make then good teachers	Г	Г	Γ	Г	Г
Students teaching mentors helps the students to develop employability skills	Г	Г	Г	Г	Г

If you would like to make any comments about students teaching mentors how to use MyProgress please add these below.



Time taken to complete student assessments

Overall, how long did it take you to complete an individual student's assessment using MyProgress?

- o fewer than 30 mins
- 30mins 1 hour
- C^{2-4hours}
- C 5-7 hours
- C 8-10 hours
- O More than 10 hours

Before we moved to MyProgress, overall, how long did it used to take you to complete the paper practice assessment for student nurses *Required*

C	Never used paper practice assessment
0	fewer than 30 mins
0	30 mins - 1hour
~	2-4hours
0	5-7 hours
0	8-10 hours
0	More than 10 hours.

When using MyProgress overall how long did you spend working together completing the MyProgress/digital practice assessment documentation (i.e., in the same room or place at the same time). *Required*

C None - completed the assessment independent from the student

- Fewer than 30 minutes
- O 30mins 1 hour
- 2-4 hours
- 5-7 hours
- C 8- 10 hours
- O More than 10 hours

Previously, when you used paper practice assessment documentation, overall, how long did you spend on average together with your student completing the paper practice assessment documentation (i.e., in the same room or place at the same time)?

Required

- Fewer than 30 minutes
- C 30mins 1 hour
- C 2-4 hours C 5-7hours
 - e 8-10 hours
 - More than 10 hours
 - C Did not use paper practice assessment
 - None completed the assessment independent from the student

Please write below any additional information that you would like to provide about the length of time it takes to complete the practice assessment on MyProgress.

Benefits of using MyProgress

Please rate the following aspects of MyProgress Please only select one answer per row
Required

Please don't select more than 1 answer(s)

per row. Please select at least 10 answer(s).

Please don't select more than 10 answer(s) in any single column.

	Excellent	Good	Satisfactory	Adequate	Unsatisfacto ry
Legibility	Γ	Γ	Г	Г	Г
Ability to edit assessments	Г	Г	Г	Г	Г
Ability to check assessments from previous placements	Γ	Γ	Г	Γ	Γ
Checking/tracking student progress	Γ	Γ	Г	Γ	Γ
Environmental benefits	Г	Г	Г	Г	Г
Portability	Г	Г	Г	Г	Г
Accessing student assessments	Г	Г	Г	Г	Γ
Prevention of falsification of documentation	Γ	Γ	Г	Γ	Γ
Keeping evidence for NMC re-validation	Γ	Γ	Г	Γ	Γ
Keeping evidence for Tri- annual review	Γ	Γ	Γ	Γ	Γ
Security of assessment storage	Γ	Γ	Г	Γ	Γ

Please write below any other comments you may have about the benefits of using MyProgress.

Ease of using MyProgress

Please rate your experience of the following aspects of MyProgress. □ Required

Please don't select more than 1 answer(s)

per row. Please select at least 22 answer(s).

Please don't select more than 22 answer(s) in any single column.

	Very easy	Relatively easy	Neutral	Relatively Hard	Very Hard	Did not use/ not appli cabl e
Setting up your mentor account	Г	Γ	Г	Г	Г	Г
Logging into the student's account	Г	Γ	Г	Г	Г	Г
Completing assessments on the computer	Г	Γ	Г	Г	Г	Г
Completing assessments on the tablet	Г	Γ	Г	Г	Г	Г
Finding the student's assessments to complete	Г		Г	Г	Г	Г
Resetting/obtaining replacement password	Г	Γ	Г	Г	Г	Г
Navigating within MyProgress (on the computer)	Г	Γ	Г	Г	Г	Г
Navigating within MyProgress (on the tablet)	Г	Γ	Г	Г	Г	Г
Sequencing of the assessments / assessment order	Г	Γ	Г	Г	Г	Г
Tracking student progress (on tablet)	Γ		Г		Г	Г
Tracking student progress (on the computer)	Γ		Г		Г	Г
Typing on the tablet	Г		Г	Γ	Г	Г
Using the speech to text function on the tablet	Г		Г		Г	Г
Using predictive text on the tablet	Γ		Г		Г	Г

Saving draft assessments (on the computer)	Г	Γ	Г	Г	Г	Г
Saving draft assessments (on the tablet)	Г	Г	Г	Г	Г	Г
Syncing assessments on the tablet	Г	Г	Г	Г	Г	Г
Identifying submission deadlines for assessments	Γ	Γ	Г	Г	Г	Г
Completing formative assessments by due date	Г	Γ	Г	Г	Г	Г
Completing summative assessments by due date	Г	Г	Г	Г	Г	Г
Layout of individual assessments	Г	Γ	Г	Г	Г	Г
Using the MyProgress automated help desk	Г	Г	Г	Г	Г	Г

If you have any comments you would like to add about using MyProgress please write these below.



Comparing MyProgress to Paper Practice Assessment

Please rate your agreement with the following statements when comparing using MyProgress for practice assessment to the paper version *Required*

Please don't select more than 1 answer(s)

per row. Please select at least 13 answer(s).

Please don't select more than 13 answer(s) in any single column.

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not applicab le / Did not use
Using MyProgress means that I am more likely to register my mentor details and record induction information on time (First week of placement)	Г	Г	Г	Г	Г	Г
Using MyProgress means that I am more likely complete and record the formative assessment on time.	Г	Г	Г	Г	Г	Г
Using MyProgress means that I need to take more time to sit down with the student and complete the assessment	Г	Г	Г	Г	Г	Г
Using MyProgress means that I take completing the assessment more seriously because it is a digital record.	Г	Г	Г	Г	Г	Г
Using MyProgress makes it harder for the assessment to be undertaken 'on the hoof'	Г	Г	Г	Г	Г	Г
MyProgress is less 'tatty' than the paper assessment	Г	Г	Г	Г	Г	Г
Using MyProgress means that the assessment is more secure and more likely to be lost than the paper version	Г	Г	Г	Г	Г	Г
Using MyProgress makes it harder for the student to falsify their documentation	Г	Γ	Г	Г	Г	Γ
Using MyProgress means that all the assessment elements are more likely to be completed in full.	Г	Г	Г	Г	Г	Г

Using MyProgress makes it easier for me to access the student's assessment from previous placements.	Г	Г	Г	Г	Г	Г
Using MyProgress makes it easier to communicate about student progress with the student's personal tutor at Anglia Ruskin University.	Г	Г	Г	Г	Г	Г
Using MyProgress improves the information available at PEC (practice education meetings in trusts).	Г	Г	Г	Г	Г	Γ
Using MyProgress provides the mentor with useful evidence of CPD	Г	Г	Г	Г	Г	Γ

Please use the space below to write any other comparisons that you would like to make between the paper practice assessment document and the MyProgress version.



Specific Assessments in MyProgress

How did you find completing specific assessments in MyProgress? Required

Please don't select more than 1 answer(s)

per row. Please select at least 9 answer(s).

Please don't select more than 9 answer(s) in any single column.

	Very easy	Relatively easy	Neutral	Relatively hard	Very hard	N/A did not comple te
Induction and mentor registration	Г	Γ	Γ	Г	Г	Г
Student pledge	Г	Γ	Г	Г	Г	Г
Formative assessment	Г	Γ	Г	Г	Г	Г
Inter-professional feedback	Г	Г	Г	Г	Г	Γ
Service user feedback	Г	Г	Г	Г	Г	Γ
Cluster skills	Г	Γ	Г	Г	Г	Г
Summative assessment	Г	Γ	Г	Г	Г	Г
Action plan	Г	Γ	Г	Г	Г	Г
Cause for concern	Г	Г	Г	Г	Г	Г

If you have comments you would like to make about specific assessments please write these below.



Additional uses for the tablet

How useful are the following features of the tablet in the placement area ... Required?

Please don't select more than 1 answer(s)

per row. Please select at least 11 answer(s).

Please don't select more than 11 answer(s) in any single column.

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful
Storing Educational / Professional Resources	Γ	Γ	Γ	Г	Г
Using professional Apps (e.g., BNF, Resuscitation guidelines, Anatomy)	Г	Г	Г	Г	Г
Spell Check	Г	Г	Γ	Г	Г
Finding evidence /references	Г	Γ	Γ	Г	Г
Internet searching	Г	Γ	Г	Г	Γ
Making educational notes	Г	Γ	Г	Г	Г
Recording reflections	Г	Г	Г	Г	Г
Watching educational videos	Г	Γ	Γ	Г	Г
Recording a photographic record of learning artefacts	Г	Г	Г	Г	Г
Audio recording tutorial meetings between student and mentor	Г	Г	Г	Г	Г
Audio recording teaching elements for the student	Г	Г	Г	Г	Г

Are there any other uses for the tablet that are helpful in placement areas? Please describe below.

Specific Communities of Practice

Are there any issues you had with using MyProgress related to the specific area of practice in which you work e.g., paediatric, mental health, acute ward, medical ward, community placement etc? *Required*

O Yes

O No

Please discuss the particular issues/ concerns you had or identified below

Where you able to solve or overcome the issue/concern Optional

Please describe how you overcame or solved the issue. Optional

Enhanced learning needs

Do you have any learning needs or physical limitations which make it difficult for you to use electronic tablets?

O Yes

O No

C Prefer not to say

If you are happy to do so, please outline your specific difficulty below? Optional

Please don't select more than 1 answer(s)

per row. Please select at least 8 answer(s).

Please don't select more than 8 answer(s) in any single column.

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful	Not able to com ment
The ability for students to prepare their documents ahead of meeting with their mentor.	Г	Г	Г	Г	Г	Γ
The ability to edit/ change/ delete text in the assessment	Γ	Γ	Г	Γ	Г	Γ
Speech to text facility on tablet - so you do not need to write.	Γ	Г	Г	Г	Г	Γ
Text to speech feature	Г	Г	Γ	Г	Г	Г
Spell checker	Г	Г	Γ	Г	Г	Г
Typing rather than handwriting	Г	Г	Г	Г	Г	Γ
Ability to change the background colour	Г	Г	Γ	Г	Г	Γ

Predictive text	Г	Г	Г	Г	Г	Г
-----------------	---	---	---	---	---	---

Please use the box below to discuss any points you would like to make about accessibility and the use of MyProgress



Specific Issues

How often did any of the following hamper your ability to complete the assessment on MyProgress?

Required

Please don't select more than 1 answer(s)

per row. Please select at least 12 answer(s).

Please don't select more than 12 answer(s) in any single column.

	Not at all	Once or twice	A few times	Frequently
Lack of availability of computers in your work area	Г	Г	Г	Γ
Not being able to recall my username or password	Γ	Г	Г	Γ
Computers at work being in public areas	Г	Г	Г	Г
Browser not displaying MyProgress correctly on your computer at work	Γ	Г	Г	Γ
Browser not displaying MyProgress correctly on your computer at home	Γ	Г	Г	Γ
Need to click between pages on computer	Г	Γ	Г	Г
Need to click between pages on tablet	Г	Γ	Γ	Г
Draft assessments being deleted or 'lost' on tablet	Γ	Г	Г	Γ
Draft assessments being deleted or 'lost' on computer	Γ	Г	Г	Γ
Battery life of the tablet	Г	Γ	Γ	Г
Student loosing/ not bringing in tablet	Г	Г	Г	Г
Regenerating assessment forms	Г	Γ	Γ	Г

Support for MyProgress

Have you needed to access support for using MyProgress from Anglia Ruskin University?

O Yes

O No

How do you rate the support that you received?

- Excellent
 Good
 Adequate
 Poor
 1 working day
 2 working days
 3 working days
- C 4 or more working days

How quickly did you receive help from Anglia Ruskin when requesting support?

Did you use the MyProgress automated helpdesk? https://angliasea.freshdesk.com/support/home

□ Yes

∏ No

Where you able to solve your problem/ answer your question from the automated answers to frequently asked questions on the helpdesk

□ Yes

□ No

How helpful was the response you got from 'raising a ticket' on the MyProgress helpdesk?

- Extremely helpful
- ☐ Very helpful
- ☐ Moderately helpful
- Slightly helpful
- Not at all helpful
- \square I did not use the 'raise a ticket' feature

Sign off Mentor

Are you a sign off mentor and completed sign off documentation . Required?

O Yes

O No

Please rate your experience of training in using MyProgress for sign off mentors

Please don't select more than 1 answer(s)

per row. Please select at least 5 answer(s).

Please don't select more than 5 answer(s) in any single column.

	Excellent	Good	Adequate	Poor	Did not receive this training
Online sign off mentor training resources	Γ	Г	Γ	Γ	Γ
Group training at work provided my Anglia Ruskin University	Г	Г	Г	Г	Г
One to one training provided by Anglia Ruskin University	Г	Г	Г	Γ	Г
Telephone support	Γ	Γ	Г	Г	Г
Email support	Γ	Г	Г	Г	Г

As a sign off mentor please rate your experience of the following

Please don't select more than 1 answer(s)

per row. Please select at least 4 answer(s).

Please don't select more than 4 answer(s) in any single column.

	Very Easy	Relatively Easy	Neutral	Relatively Hard	Very Hard
Reviewing the student's practice assessment	Г	Г	Γ	Г	Г

Searching and selecting documents for review	Γ	Г	Г	Γ	Γ
Completing the weekly SOM contact Record	Г	Г	Г	Γ	Γ
Completing the sign off mentor declaration	Г	Г	Г	Г	Г

As a sign off mentor please rate your response to the statements below.

Please don't select more than 1 answer(s)

per row. Please select at least 7 answer(s).

Please don't select more than 7 answer(s) in any single column.	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree
Reviewing the student's assessment in MyProgress is harder than reviewing the paper PAD	Г	Г	Г	Г	Г
Reviewing the student's assessment in MyProgress is quicker than reviewing the paper PAD	Г	Г	Г	Г	Г
The documentation is more legible	Г	Г	Г	Г	Г
It is harder to gain access to the student's assessment entire record	Г	Г	Г	Г	Г
The search facility in progress is helpful to find the assessment for review	Г	Г	Г	Г	Г
Using MyProgress enables me to gain access to the student's practice record earlier in their sign off placement.	Г	Г	Г	Г	Г
It is beneficial not to have to carry/store the student's paper record	Г	Г	Г	Г	Г

Please insert any comments that you would like to make about the sign off mentor documentation in the box below.



Final Thoughts

Please list / or discuss below the three most beneficial / useful aspects of MyProgress.

Please list / discuss below up to three areas for improvement for MyProgress

If there is anything else that you would like us to know about the mentor experience of using MyProgress that you think it would be useful for use to know please add this information to the box below.



End

Thank you very much for participating in this survey.
Key for selection options

- Please identify your work area

Anglian Community Enterprises

Basildon and Thurrock NHS Foundation Trust Colchester University Hospital NHS Foundation Trust Essex Independent Sector

Essex Partnership University NHS Foundation Trust Mid Essex Hospital Services NHS Trust

(MEHT) Princess Alexandra Harlow NHS Trust

Provide

Southend University Hospital NHS Foundation Trust

- Please select your work area

Cambridge and Peterborough Foundation Trust Cambridge University Hospital NHS Foundation Trust Cambridge Community Services

Cambridgeshire Independent Sector North West Anglia NHS Foundation Trust Royal Papworth NHS Foundation

Appendix 19 Coding examples

19a Initial/open codes

	Initial code/open code	T4	T2	T1	Т3	SFG2	SFG1	S4	Т6	Т5	Students Total	Tutors Total	Totals
	Totals	64	98	120	71	218	173	95	91	93	486	537	1023
1	 Challenges in using MyProgress -Digital literacy - Skills 	8	1	2	4	20	8	3	2	3	31	20	51
2	Navigation - layout/set up of assessments	0	2	2	2	16	10	6	3	2	32	11	43
3	Education of mentors	8	0	3	0	6	8	7	0	0	21	11	32
4	Legitimising MyProgress students	1	4	1	0	9	2	8	3	2	19	11	30
5	 Challenges in using MyProgress- Tablet hardware issues 	1	2	1	2	10	3	5	1	0	18	7	25
6	Legitimising MyProgress mentors	5	0	0	0	7	7	4	1	1	18	7	25
7	Specific COP - Mentors	9	1	1	2	7	4	0	0	0	11	13	24
8	 MyProgress Support 	0	6	2	0	2	2	1	3	6	5	17	22
9	Novice teaching Expert	3	0	0	0	4	10	4	0	0	18	3	21
10	 Using MyProgress academics - How academics use MyProgress for tutorial 	0	1	7	3	0	0	0	4	6	0	21	21
11	 Governance MyProgress - easier to check on student progress 	0	4	4	2	0	3	1	6	0	4	16	20
12	Using MyProgress - prefer computer to tablet	1	0	2	0	5	4	3	2	3	12	8	20
13	 Challenges in using MyProgress - clicking backwards and forwards 	0	0	4	2	3	1	1	1	6	5	13	18
14	 Using MyProgress academics - preparing in advance 	0	2	5	4	0	0	1	1	5	1	17	18
15	Education of students	2	5	0	2	5	1	0	2	0	6	11	17
16	 Challenges in using MyProgress - Fears / Concerns 	1	3	0	5	4	1	0	1	0	5	10	15
17	 Governance MyProgress - Secure storage of PAD 	0	0	3	4	2	0	2	0	4	4	11	15
18	 Challenges in using MyProgress - predictive text 	0	0	0	0	8	2	1	0	3	11	3	14
18	Challenges in using MyProgress - Prefer paper	0	0	1	0	4	4	4	0	1	12	2	14
20	 Governance MyProgress - ability to edit document. 	0	1	0	0	4	7	2	0	0	13	1	14
21	 Using MyProgress mentors - How mentors use MyProgress 	2	0	1	3	3	2	0	2	1	5	9	14
22	Using MyProgress - first impressions	0	1	2	0	5	0	1	2	2	6	7	13
23	Accessibility/Enhanced learning needs	0	0	0	0	4	6	2	0	0	12	0	12
24	Challenges in using MyProgress -software issues	0	0	0	0	5	4	2	1	0	11	1	12

	Initial code/open code	T4	T2	T1	Т3	SFG2	SFG1	S 4	Т6	Т5	Students Total	Tutors Total	Totals
25	Education of tutors	0	2	3	3	0	0	0	3	1	0	12	12
26	Governance MyProgress - improved	0	0	0	0	6	4	0	0	1	10	1	11
27	Governance MyProgress - assessments completed on time	0	2	4	1	0	3	0	0	1	3	8	11
28	 Using MyProgress academics -Frequency of checking student progress 	0	3	2	1	0	0	0	4	1	0	11	11
29	Challenge in using MyProgress - time constraints	1	0	1	0	4	0	0	1	3	4	6	10
30	Challenges in using MyProgress -Change Process	0	1	0	0	1	3	2	2	1	6	4	10
31	Challenges in using MyProgress- more time consuming	1	0	0	2	4	2	0	1	0	6	4	10
32	Challenges in using MyProgress- Syncing	0	1	3	0	1	3	0	0	2	4	6	10
33	Governance MyProgress- more complete documentation	1	1	2	1	0	0	1	2	2	1	9	10
34	Navigation - sequencing of resources illogical.	0	2	1	0	2	3	0	0	2	5	5	10
35	Navigations - student unsure if assessments complete	0	0	0	0	9	1	0	0	0	10	0	10
36	Weakness of paper PAD - Tatty books	0	1	2	1	1	4	0	0	1	5	5	10
37	Increasing legitimacy students	0	5	1	1	0	1	0	0	1	1	8	9
38	Legitimising MyProgress for academics	0	2	0	0	0	0	0	6	1	0	9	9
39	Legitimate Practice Academics	0	0	0	0	0	0	1	2	6	1	8	9
<mark>40</mark>		<mark>3</mark>	<mark>0</mark>	<mark>2</mark>	<mark>1</mark>	<mark>1</mark>	<mark>0</mark>	<mark>0</mark>	<mark>2</mark>	<mark>0</mark>	<mark>1</mark>	<mark>8</mark>	<mark>9</mark>
41	 Age - Impact of Age on learning to use MyProgress 	0	2	0	2	1	1	0	2	0	2	6	8
42	Challenges in using MyProgress - lost assessments	0	0	0	0	2	4	1	0	1	7	1	8
43	Navigation - finding assessments to complete	0	0	0	0	0	4	0	1	3	4	4	8
44	Weakness of Paper PAD: Problems with PAD completion	0	2	3	1	0	0	0	1	1	0	8	8
45	 Advantages of MyProgress - mentors spending more quality time with students 	1	0	0	0	4	2	0	0	0	6	1	7
46	Advantages of paper PAD - ability to flick through	0	0	1	1	4	0	0	0	1	4	3	7
47	Communication-between mentor and student.	3	1	0	0	3	0	0	0	0	3	4	7
48	Navigation - regenerating forms	0	0	1	0	6	0	0	0	0	6	1	7
49	Using MyProgress mentors - resistance	0	0	1	0	5	1	0	0	0	6	1	7
50	Additional skills students learnt from SEA - Teaching	0	0	0	0	0	2	4	0	0	6	0	6
51	Advantages of MyProgress- flexible choice of platform	0	0	0	0	0	4	1	1	0	5	1	6
52	Challenges in using MyProgress - Students reluctance	0	2	1	1	2	0	0	0	0	2	4	6

	Initial code/open code	T4	T2	T1	Т3	SFG2	SFG1	S4	Т6	Т5	Students Total	Tutors Total	Totals
53	Communication between personal tutor and student	0	2	2	0	0	2	0	0	0	2	4	6
54	Educating Academics	0	1	0	0	0	0	0	2	3	0	6	6
55	Governance MyProgress - managing students from a distance	0	1	3	0	0	0	1	1	0	1	5	6
56	Governance MyProgress-easier to check mentor details	0	3	2	0	0	0	0	1	0	0	6	6
57	Legitimate Practice Students	0	0	0	0	0	0	5	0	1	5	1	6
58	 Using MyProgress academics -How MyProgress can be used to support students in practice 	0	1	0	0	0	0	0	5	0	0	6	6
59	 Using MyProgress mentors - prefer computer to tablet 	0	1	0	0	2	0	2	1	0	4	2	6
60	 Using MyProgress students - completing draft documents prior to assessment 	0	0	0	0	1	5	0	0	0	6	0	6
61	 Using MyProgress students - not completing assessments on time 	0	0	3	1	1	0	0	1	0	1	5	6
62	Additional skills students learnt from SEA - Digital Skills	0	0	0	0	0	2	2	1	0	4	1	5
63	Additional skills students learnt from SEA - Leadership	0	0	0	0	0	2	3	0	0	5	0	5
64	Additional uses for tablets - internet searching-educational	0	0	0	0	1	4	0	0	0	5	0	5
65	Advantages of paper PAD -knowledgeable about books	0	2	1	0	0	0	0	0	2	0	5	5
66	Specific COP - Mental Health	0	0	4	0	0	1	0	0	0	1	4	5
67	Specific COP - Sign off mentors	2	0	0	0	0	0	0	3	0	0	5	5
68	System Convenor	0	0	0	0	0	0	1	4	0	1	4	5
69	Advantages of paper PAD -students feel more comfortable with paper	1	1	0	1	0	0	0	0	1	0	4	4
70	 Advantages of MyProgress - Providing student support 	0	0	2	0	0	2	0	0	0	2	2	4
71	Challenges in using MyProgress - breach of academic regulations	1	0	2	1	0	0	0	0	0	0	4	4
72	Challenges in using MyProgress - safe storage of tablets in practice	0	0	0	0	4	0	0	0	0	4	0	4
73	Challenges in using MyProgress - timesheets	0	0	0	0	1	3	0	0	0	4	0	4
74	Governance mentors - not completing assessments on time	0	0	0	1	0	2	0	0	1	2	2	4
75	Governance MyProgress - able to check assessment from previous placements.	1	0	0	1	0	0	1	1	0	1	3	4
76	Increasing legitimacy - improve MyProgress	0	2	1	0	0	0	0	0	1	0	4	4
77	Legitimising MyProgress - becoming familiar	0	0	0	0	0	0	1	0	3	1	3	4
78	Specific COP - Tutors	0	0	0	4	0	0	0	0	0	0	4	4
79	Using MyProgress academics - email reminders	0	2	1	0	0	1	0	0	0	1	3	4
80	Using MyProgress academics - Group Reports	0	3	1	0	0	0	0	0	0	0	4	4

	Initial code/open code	T4	T2	T1	Т3	SFG2	SFG1	S4	Т6	T5	Students Total	Tutors Total	Totals
81	Additional uses for tablets - Educational/Professional Resources	0	0	0	0	1	2	0	0	0	3	0	3
82	• Advantages of MyProgress - quicker to complete on the computer than paper.	0	0	0	0	2	0	0	0	1	2	1	3
83	Challenges in using MyProgress tutors - unsure if documentation is complete	0	0	0	2	0	0	0	1	0	0	3	3
84	Challenges in using MyProgress- new concept	0	3	0	0	0	0	0	0	0	0	3	3
85	Governance of MyProgress - prevention of falsification of documentation	0	0	0	1	0	1	0	0	1	1	2	3
86	Overcoming Challenges - use computer / big screen	1	2	0	0	0	0	0	0	0	0	3	3
87	Specific COP - Apprenticeships	0	0	0	0	0	0	0	3	0	0	3	3
88	Specific COP - Community Nurses	0	0	0	0	0	3	0	0	0	3	0	3
89	Specific COP - Education Champion	0	1	1	1	0	0	0	0	0	0	3	3
90	Specific COP - Mental Health Secure Units	0	0	3	0	0	0	0	0	0	0	3	3
91	Using MyProgress academics - RAG tool	0	0	2	0	0	0	0	0	1	0	3	3
92	 Using MyProgress mentors - unable to access student assessments 	1	0	1	0	1	0	0	0	0	1	2	3
93	Using MyProgress students - reflective accounts	0	0	1	0	2	0	0	0	0	2	1	3
94	• Weakness of paper PAD - Students not bringing in Previous PADS for mentors to read.	0	0	1	1	0	0	0	0	1	0	3	3
95	Advantages of MyProgress -spellcheck	0	0	0	0	0	0	2	0	0	2	0	2
96	Advantages of MyProgress - revalidation	0	0	0	0	1	0	1	0	0	2	0	2
97	 Advantages of MyProgress -reflections 	0	0	0	0	2	0	0	0	0	2	0	2
98	 Advantages of MyProgress-ability to reassure students 	0	2	0	0	0	0	0	0	0	0	2	2
99	Challenge in using MyProgress - do not recognise the documents	2	0	0	0	0	0	0	0	0	0	2	2
100	Challenges in using MyProgress - access in Medium Secure Mental Health Units	0	0	2	0	0	0	0	0	0	0	2	2
101	Challenges in using MyProgress - lack of staff	0	0	0	0	0	0	0	1	1	0	2	2
102	Challenges in using MyProgress - negative student attitude impact on mentors	1	1	0	0	0	0	0	0	0	0	2	2
103	 Challenges in using MyProgress - regenerating forms 	0	0	1	0	0	1	0	0	0	1	1	2
104	Communication between academic and mentors	0	0	2	0	0	0	0	0	0	0	2	2
105	Grade inflation	0	0	2	0	0	0	0	0	0	0	2	2
106	Illegitimate use of tablets - watching films/non-educational	0	0	0	0	0	2	0	0	0	2	0	2
107	Legitimate Practice Mentors	0	0	0	0	0	0	2	0	0	2	0	2
108	Navigation - easy to find student account	0	2	0	0	0	0	0	0	0	0	2	2

	Initial code/open code	T4	T2	T1	Т3	SFG2	SFG1	S4	Т6	T5	Students Total	Tutors Total	Totals
109	Navigation - mentors not completing all assessments	0	0	1	0	0	0	1	0	0	1	1	2
110	 Navigation - tutor unsure of how to navigate in MyProgress 	0	0	1	1	0	0	0	0	0	0	2	2
111	 Reducing illegitimacy -Increase in use of MyProgress will decrease negativity. 	0	1	1	0	0	0	0	0	0	0	2	2
112	Selective Non completion of assessments	0	0	2	0	0	0	0	0	0	0	2	2
113	Specific COP - Digital Scholars	0	0	0	0	0	2	0	0	0	2	0	2
114	Specific COP- Placement areas difficult learning environments for students	0	0	0	0	2	0	0	0	0	2	0	2
115	Using MyProgress - mentors use of MyProgress	0	1	0	1	0	0	0	0	0	0	2	2
116	 Using MyProgress academics - managing incomplete assessments 	0	0	0	0	0	0	1	1	0	1	1	2
117	 Using MyProgress academics - providing positive feedback 	0	0	1	0	0	0	0	1	0	0	2	2
118	 Using MyProgress students - emailing assessment to assessor to complete 	0	0	0	0	0	0	1	0	1	1	1	2
119	Using MyProgress students - need for privacy	0	0	0	0	2	0	0	0	0	2	0	2
120	Weakness of paper PAD - losing record	0	0	0	1	0	0	0	0	1	0	2	2
121	Additional skills students learnt from SEA - Reflection	0	0	0	0	0	1	0	0	0	1	0	1
122	Additional uses for tablets - Finding Evidence/references	0	0	0	0	1	0	0	0	0	1	0	1
123	Additional uses for tablets - making notes/educational	0	0	0	0	0	1	0	0	0	1	0	1
124	 Advantages of MyProgress - environmental benefits 	0	0	1	0	0	0	0	0	0	0	1	1
125	 Advantages of MyProgress - portability 	0	0	0	0	0	1	0	0	0	1	0	1
126	Challenge in using MyProgress - access to computers in placement	0	0	0	0	0	0	1	0	0	1	0	1
127	Challenge in using MyProgress - passwords	0	0	0	1	0	0	0	0	0	0	1	1
128	Challenges in using MyProgress - negative mentor attitude impact on students	1	0	0	0	0	0	0	0	0	0	1	1
129	Challenges in using MyProgress - no progress tracker on the app version	0	0	0	0	1	0	0	0	0	1	0	1
130	Challenges in using MyProgress - transition two systems in place	0	0	0	0	0	0	1	0	0	1	0	1
131	 Challenges in using MyProgress - typing on the tablet 	0	0	0	0	0	1	0	0	0	1	0	1
132	Challenges in using MyProgress -denial	0	0	0	0	0	1	0	0	0	1	0	1
133	Challenges in using MyProgress -Inaccuracies errors in MyProgress	0	0	0	0	1	0	0	0	0	1	0	1
134	Challenges in using MyProgress tutors -concern that it would make job more difficult	0	1	0	0	0	0	0	0	0	0	1	1
135	Governance MyProgress - Sharing passwords	0	0	1	0	0	0	0	0	0	0	1	1
136	Illegitimate use of tablets - playing games	0	0	0	0	1	0	0	0	0	1	0	1

	Initial code/open code	T4	Т2	T1	Т3	SFG2	SFG1	S4	Т6	Т5	Students Total	Tutors Total	Totals
137	Legitimising MyProgress - updates upgrades	0	0	0	0	1	0	0	0	0	1	0	1
138	Navigation - academic unsure if documentation complete	0	0	0	1	0	0	0	0	0	0	1	1
139	Navigation - alerts when students have failed	0	0	0	1	0	0	0	0	0	0	1	1
140	 Navigation - historic assessments left on system make navigation difficult. 	0	1	0	0	0	0	0	0	0	0	1	1
141	Negative response to MyProgress	0	1	0	0	0	0	0	0	0	0	1	1
142	Quality Assurance - RAG forms	0	1	0	0	0	0	0	0	0	0	1	1
143	Quality of mentor feedback	0	0	0	0	1	0	0	0	0	1	0	1
144	Responsibility for completion of assessment	0	0	1	0	0	0	0	0	0	0	1	1
145	Specific COP - Doctors	0	0	0	0	0	0	1	0	0	1	0	1
146	Specific COP - External Examiners	0	0	1	0	0	0	0	0	0	0	1	1
147	Specific COP - Hospital Based	0	0	0	0	0	1	0	0	0	1	0	1
148	Specific COP - Work based learning groups	0	1	0	0	0	0	0	0	0	0	1	1
149	Substandard quality of practice assessment	1	0	0	0	0	0	0	0	0	0	1	1
150	 Using MyProgress academics - Feedback to PECs 	0	0	1	0	0	0	0	0	0	0	1	1
151	 Using MyProgress mentors - preparing for meeting with student 	0	0	1	0	0	0	0	0	0	0	1	1
152	 Using MyProgress mentors - quality of feedback 	0	0	0	0	0	0	0	1	0	0	1	1
153	 Using MyProgress students - more recent students more positive 	0	0	1	0	0	0	0	0	0	0	1	1
154	 Using MyProgress students - Prefer tablet to computer 	0	0	0	0	0	1	0	0	0	1	0	1
155	Weakness of paper PAD - done on the hoof	1	0	0	0	0	0	0	0	0	0	1	1
156	Weakness of paper PAD - Student not submitting Paper PAD for formative checking to tutors	0	1	0	0	0	0	0	0	0	0	1	1

19b Attributing colours to family members

	Open Code	Groundiness (number of times open code appears in the data)	Total	Research question
•	Grade inflation	30		Q1a_Legitimacy
•	Illegitimate use of tablets - playing games	25		Q1a_Legitimacy
•	Illegitimate use of tablets - watching films/non-educational	9		Q1a_Legitimacy
•	Increasing legitimacy students	9		Q1a_Legitimacy
•	Increasing legitimacy - improve MyProgress	9		Q1a_Legitimacy
•	Legitimate Practice Mentors	6		Q1a_Legitimacy
•	Legitimate Practice Students	4		Q1a_Legitimacy
•	Legitimising MyProgress for academics	4		Q1a_Legitimacy
•	Legitimising MyProgress mentors	2		Q1a_Legitimacy
•	Legitimising MyProgress students	2		Q1a_Legitimacy
•	Legitimising MyProgress - updates upgrades	2		Q1a_Legitimacy
•	Legitimate Practice Academics	2		Q1a_Legitimacy
•	Legitimising MyProgress - becoming familiar	2		Q1a_Legitimacy
•	Reducing illegitimacy	1		Q1a_Legitimacy
•	Selective Non completion of assessments	1		Q1a_Legitimacy
			108	
•	Specific COP - Apprenticeships	24		Q1c_Specific communities of practice
•	Specific COP - Community Nurses	11		Q1c_Specific communities of practice
•	Specific COP - Education Champion	5		Q1c_Specific communities of practice
•	Specific COP - Mental Health	5		Q1c_Specific communities of practice
•	Specific COP - Mentors	4		Q1c_Specific communities of practice

	Open Code	Groundiness (number of times open code appears in the data)	Total	Research question
•	Specific COP - NMC/ Regulators	4		Q1c_Specific communities of practice
•	Specific COP - Sign off mentors	3		Q1c_Specific communities of practice
•	Specific COP - Tutors	3		Q1c_Specific communities of practice
			59	
•	Advantages of paper PAD -knowledgeable about books	5		Q2a_Challenges in using MyProgress
•	Advantages of paper PAD -students feel more comfortable with paper	4		Q2a_Challenges in using MyProgress
			9	
•	Challenge in using MyProgress - access to computers in placement	51		Q2a_Challenges in using MyProgress
•	Challenge in using MyProgress - do not recognise the documents	25		Q2a_Challenges in using MyProgress
•	Challenge in using MyProgress - passwords	18		Q2a_Challenges in using MyProgress
•	Challenge in using MyProgress - time constraints	15		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress - access in Medium Secure Mental Health Units	14		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress - breach of academic regulations	14		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress - clicking backwards and forwards	12		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress - Fears / Concerns	10		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress - lack of staff	10		Q2a_Challenges in using MyProgress

	Open Code	Groundiness (number of times open code appears in the data)	Total	Research question
•	Challenges in using MyProgress - lost assessments	10		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress - negative mentor attitude impact on students	10		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress - negative student attitude impact on mentors	8		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress - no progress tracker on the app version	6		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress - predictive text	4		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress - Prefer paper	4		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress - regenerating forms	4		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress - safe storage of tablets in practice	4		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress - Students reluctance	3		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress - timesheets	3		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress - transition two systems in place	2		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress - typing on the tablet	2		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress -Change Process	2		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress -denial	2		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress -Inaccuracies errors in MyProgress	1		Q2a_Challenges in using MyProgress

	Open Code	Groundiness (number of times open code appears in the data)	Total	Research question
•	Challenges in using MyProgress -software issues -general	1		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress tutors - unsure if documentation is complete	1		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress tutors -concern that it would make job more difficult	1		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress- more time consuming	1		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress- new concept	1		Q2a_Challenges in using MyProgress
•	Challenges in using MyProgress- Syncing	1		Q2a_Challenges in using MyProgress
			240	
•	Navigation - academic unsure if documentation complete	43		Q2b_Navigation
•	Navigation - alerts when students have failed	10		Q2b_Navigation
•	Navigation - easy to find student account	8		Q2b_Navigation
•	Navigation - finding assessments to complete	2		Q2b_Navigation
•	Navigation - historic assessments left on system make navigation difficult.	2		Q2b_Navigation
•	Navigation - layout/set up of assessments	2		Q2b_Navigation
•	Navigation - mentors not completing all assessments	2		Q2b_Navigation
•	Navigation - regenerating forms	1		Q2b_Navigation
•	Navigation - sequencing of resources illogical.	1		Q2b_Navigation
•	Navigation - tutor unsure of how to navigate in MyProgress	1		Q2b_Navigation
•	Navigations - student unsure if assessments complete	1		Q2b_Navigation
			73	
•	Educating Academics	32		Q3a_Education and support

	Open Code	Groundiness (number of times open code appears in the data)	Total	Research question
•	Education of mentors	22		Q3a_Education and support
•	Education of students	21		Q3a_Education and support
•	Education of tutors	17		Q3a_Education and support
•	MyProgress Support	12		Q3a_Education and support
•	Novice teaching Expert	6		Q3a_Education and support
•	System Convenor	5		Q3a_Education and support
			115	
•	Advantages of MyProgress -spellcheck	7		Q3b_Advantages of MyProgress
•	Advantages of MyProgress - environmental benefits	6		Q3b_Advantages of MyProgress
•	Advantages of MyProgress - mentors spending more quality time with students undertaking practice assessment	3		Q3b_Advantages of MyProgress
•	Advantages of MyProgress - portability	2		Q3b_Advantages of MyProgress
•	Advantages of MyProgress - quicker to complete on the computer than paper.	2		Q3b_Advantages of MyProgress
•	Advantages of MyProgress - revalidation	2		Q3b_Advantages of MyProgress
•	Advantages of MyProgress -reflections	2		Q3b_Advantages of MyProgress
•	Advantages of MyProgress- flexible choice of platform	1		Q3b_Advantages of MyProgress
•	Advantages of MyProgress-ability to reassure students	1		Q3b_Advantages of MyProgress
			26	
•	Accessibility/Enhanced learning needs	20		Q4a_Governance MyProgress
•	Governance MyProgress - Sharing passwords	15		Q4a_Governance MyProgress
•	Governance MyProgress- more complete documentation	14		Q4a_Governance MyProgress
•	Governance mentors - not completing assessments on time	12		Q4a_Governance MyProgress
•	Governance MyProgress - improved legibility	11		Q4a_Governance MyProgress
•	Governance MyProgress - ability to edit document.	11		Q4a_Governance MyProgress

	Open Code	Groundiness (number of times open code appears in the data)	Total	Research question
•	Governance MyProgress - able to check assessment from previous placements.	10		Q4a_Governance MyProgress
•	Governance MyProgress - assessments completed on time	6		Q4a_Governance MyProgress
•	Governance MyProgress - easier to check on student progress	6		Q4a_Governance MyProgress
•	Governance MyProgress - managing students from a distance	4		Q4a_Governance MyProgress
•	Governance MyProgress - Secure storage of PAD	4		Q4a_Governance MyProgress
•	Governance MyProgress-easier to check mentor details	3		Q4a_Governance MyProgress
•	Governance of MyProgress - prevention of falsification of documentation	1		Q4a_Governance MyProgress
•	Quality Assurance - RAG forms	1		Q4a_Governance MyProgress
•	Quality of mentor feedback	1		Q4a_Governance MyProgress
•	Responsibility for completion of assessment	1		Q4a_Governance MyProgress
•	Substandard quality of practice assessment	1		Q4a_Governance MyProgress
			121	
•	Weakness of paper PAD - done on the hoof	10		Q4b_Weakness of paper PAD
•	Weakness of paper PAD - losing record	8		Q4b_Weakness of paper PAD
•	Weakness of paper PAD - Student not submitting Paper PAD for formative checking to tutors	7		Q4b_Weakness of paper PAD
•	Weakness of paper PAD - Students not bringing in Previous PADS for mentors to read.	6		Q4b_Weakness of paper PAD
•	Weakness of paper PAD - Tatty books	5		Q4b_Weakness of paper PAD
•	Weakness of Paper PAD: Problems with PAD completion	3		Q4b_Weakness of paper PAD
			39	
•	Additional uses for tablets - Educational/Professional Resources	3		Q5a_Additional uses for tablet
•	Additional uses for tablets - Finding Evidence/references	2		Q5a_Additional uses for tablet
•	Additional uses for tablets - internet searching-educational	2		Q5a_Additional uses for tablet
•	Additional uses for tablets - making notes/educational	1		Q5a_Additional uses for tablet

	Open Code	Groundiness (number of times open code appears in the data)	Total	Research question
			8	
•	Communication between personal tutor and student	1		Q5b_Communicating
•	Communication-between mentor and student.	1		Q5b_Communicating
•	Communication between academic and mentors	1		Q5b_Communicating
			3	

19c AtlasTi Code Manager

•••	Sian Shaw PhD - Code Ma	anager		*
+ 🔟	Grouped by Nothing \$		1 · 7	Q Search
+ Q Search Code A	Name ^	🕞 🔷 Groups	Comment	Code
	Additional skills students learnt from SEA - Reflection	1 0 Q5c_Employabili	1	
Q1b_Specific Asses 19	 Additional skills students learnt from SEA - Teaching 	6 C Q5c_Employabili	1	Governance myprogress - easier to check on student progress
	 Additional uses for tablets - Educational/Professional Resources 	C 3 C Q5a_Additional	1	
Q2a_Challenges in 35	 Additional uses for tablets - Finding Evidence/references 	1 0 Q5a_Additional	1	Color O Dark Blue
Q2b_Navigation 11	 Additional uses for tablets - internet searching-educational 	C 5 C 0 Q5a_Additional	1	Comment
Q3a_Education and s 7	 Additional uses for tablets - making notes/educational 	1 0 Q5a_Additional	1	
Q3b_Advantages of 9	 Advantages of myprogress -spellcheck 	2 0 Q3b_Advantage	1	
Q4a_Governance 17	 Advantages of myprogress - enviromental benefits 	1 0 Q3b_Advantage	1	
Q4p_weakness of pa 6	♦ Advantages of myprogress - mentors spending more quality time with students undertaking practice as	7 1 Q3b_Advantage	1 Digital practice as	5
Q5a_Additional uses 4	 Advantages of myprogress - portability 	1 0 Q3b_Advantage	1	
© Q5c Employability sk 5	 Advantages of myprogress - quicker to complete on the computer than paper. 	C 3 C 0 Q3b_Advantage	1	No Comment
Using myprogress i 28	 Advantages of myprogress - revalidation 	2 1 Q3b_Advantage	1	
13 Group(s)	 Advantages of myprogress -reflections 	2 1 Q3b_Advantage	1	
	Advantages of myprogress- flexible choice of platform	6 1 Q3b_Advantage	1 The code relates to	
	Advantages of myprogress-ablity to reasure students	2 2 Q3b_Advantage	1 Studnets sometime	3
	Advantages of paper PAD - ability to flick through	— 7 — 2	0 Students like the a	In Groups
	Advantages of paper PAD -knowledgeable about books	5 1 Q2a_Challenges	1 The academic is fa	in oroups
	 Advantages of paper PAD -students feel more comfortable with paper 	4 1 Q2a_Challenges	1	C Q4a_Governance myprogress
	 Advantatges of myprogress - Providing student support 	4 2	0	Linked Codes
	Age - Impact of Age on learning to use myprogress	— 8 — 0	0 Academic belived	
	 Challenge in using myprocess - access to computers in placement 	1 1 Q2a_Challenges	1	Governance myprogress - managing
	Challenge in using myprogress - do not recognise the documents	2 0 Q2a_Challenges	1 This code relates t	
	🖕 🔍 Challenge in using myprogress - passwords	1 1 Q2a_Challenges	1 This code relates t	Coded Quotations
	Challenge in using myprogress - time constraints	10 Q2a_Challenges	1	2:31 Luse it to check on students t
	🖕 🔍 Challenges in using myprogress - access in Medium Secure Mental Health Units	2 0 Q2a_Challenges	1 This code relates t	= 2:34 . Now I don't need that, I go on
	Challenges in using myprogress - breach of academic regulations	C 3 C 0 Q2a_Challenges	1 This code relates t	2:35 Now I don't need that. I go on t
	 Challenges in using myprogress - clicking backwards and forwards 	182 Q2a_Challenges	1	2:79 No I think they still get the com
	😋 🔹 Challenges in using myprogress - Fears / Concerns	151 Q2a_Challenges	1 Feeling of fear / tre	🚔 3:47 But then there are others who a
	 Challenges in using myprogress - lack of staff 	2 0 Q2a_Challenges	1	3:48 I was also then going in and so
	🖕 🗕 Challenges in using myprogress - lost assessments	8 1 Q2a_Challenges	1 The code relates u	3:81 So the engagement is kind of in
	= 2:31 Luse it to check on students to see how they're doing, see how they're progressing. It makes it m(1)			3:90 But actually what I try and say t
	Luse it to check on students to see how they're doing, see how they're progressing. It makes it much assign			4:33 I think that. So I mean just takin
	a dae ne to check of stations to see now they re doing, see now they re progressing, it makes it much easier.			= 4.47 Obo that's a hard one. I suppos
				Status
				Created: 24 May 2018
				Sian Shaw
	2:34 . Now I don't need that. I go on to a system and follow them any time (1)			Changed: 3 May 2019
	. Now I don't need that. I go on to a system and follow them any time			Sian Shaw
				sn Sn.
N 🗳 🤜 💐 🐝	NY 📭 LA THINK 🖤 🏶 💁 🧰 📶 🌄 🖬 💭 😋 🚱 💋 Ġ 🔣 😓 🛠 🛠	(🔨 🛜 💽 💹 💽 🤫 🔁 🕖 🗫 🔘 🤇	3) 💵 🖊 🌰 👘 👘	- III I., IX III III III III III III



19d AtlasTi Code Document Table

Appendix 20 Assessment of interprofessional and personal skills



FORMATIVE ASSESSMENT OF THE INTERPERSONAL AND PROFESSIONAL SKILLS

The interpersonal /professional skills profile has been divided into 6 sections, each indicating statements around the values underpinning the NHS Constitution and the 6C's.

(F) Indicates a fail (P) Indicates a pass

STUDENT SID:

Mentors should choose <u>one</u> statement from each of the 6C's that best reflects the student's interpersonal and professional skills, irrespective of their stage of learning.

CARE	<u>Mentor</u> Please sign in ONE of the boxes below to indicate your choice of	<u>Mentor</u> Reasons / evidence for choosing this
Please choose one statement below	statement for this value	statement
(F) 1. Fails to respond to patient needs.		
(F) 2. Lacks consideration of patient comfort when delivering care.		
(F) 3. Ignores advice to improve patient care.		
(P) 4. Demonstrates evidence-based practice.		
(P) 5. Approach to care enhances the patient experience.		
(P) 6. Ensures patient is central to care decisions.		
(P) 7. Quality of care is commendable.		
COMPASSION Please choose one statement below	<u>Mentor</u> Please sign in ONE of the boxes below to indicate your choice of statement for this value	<u>Mentor</u> Reasons / evidence for choosing this statement
(F) 1. Fails to treat patients / carers / colleagues with respect.		

(F) 2. Lacks empathy / understanding towards patients' concerns.		
(F) 3. Fails to recognise opportunities to promote dignity in care delivery.		
(P) 4. Demonstrates compassion and understanding in patient care.		
(P) 5. Promotes dignity and respect in patient care.		
(P) 6. Shows a mature understanding and an empathic approach to care.		
(P) 7. Champions patient dignity and encourages colleagues to support this value.		
COMPETENCE	Mentor	<u>Mentor</u>
Please choose one statement	Please sign in ONE of the boxes below to indicate your choice of statement for this value	Reasons / evidence for choosing this
below		statement
below (F) 1 Level of care is unsafe.		statement
below (F) 1 Level of care is unsafe. (F) 2. Blames circumstances for difficulties encountered.		statement
below (F) 1 Level of care is unsafe. (F) 2. Blames circumstances for difficulties encountered. (F) 3. Unable to define own learning needs.		statement
below (F) 1 Level of care is unsafe. (F) 2. Blames circumstances for difficulties encountered. (F) 3. Unable to define own learning needs. (P) 4. Reflects on clinical practice and adapts accordingly.		statement
below (F) 1 Level of care is unsafe. (F) 2. Blames circumstances for difficulties encountered. (F) 3. Unable to define own learning needs. (P) 4. Reflects on clinical practice and adapts accordingly. (P) 5. Capable of informed decision making.		statement
below (F) 1 Level of care is unsafe. (F) 2. Blames circumstances for difficulties encountered. (F) 3. Unable to define own learning needs. (F) 4. Reflects on clinical practice and adapts accordingly. (P) 5. Capable of informed decision making. (P) 6. Delegates care effectively and with consideration for patient safety.		statement

Statements revised in collaboration with service users and mentors (Sept 2012), amended to reflect 6C's (March 2013) ©Anglia Ruskin University



FORMATIVE ASSESSMENT OF THE INTERPERSONAL AND PROFESSIONAL SKILLS

(F) Indicates a fail (P) Indicates a pass.

STUDENT SID:

Mentors should choose <u>one</u> statement from each of the 6C's that best reflects the student's interpersonal and professional skills, irrespective of their stage of learning.

COMMUNICATION Please choose one statement below	Mentor Please sign in ONE of the boxes below to indicate your choice of statement for this value	<u>Mentor</u> Reasons / evidence for choosing this statement
(F) 1. Fails to communicate key aspects of patient care to appropriate staff.		
(F) 2. Reacts adversely to constructive criticism.		
(F) 3. Lacks self awareness and the effect of behaviours on others.		
(P) 4. Has a pleasant and approachable manner.		
(P) 5. Communicates effectively with patients and relatives.		
(P) 6. Uses interprofessional team working to support effective patient care.		
(P) 7. Encourages patients to participate in decisions around their care.		
COURAGE	Mentor	Mentor
Please choose one statement below	Please sign in ONE of the boxes below to indicate your choice of statement for this value	Reasons / evidence for choosing this statement
(F) 1. Demonstrates lack of interest regarding standards		

 (F) 2. Fails to respond to and report concerns of patients and carers. (F) 3. Poor advocate for patients / carers when opportunity arises. (P) 4. Accepts appropriate responsibility. (P) 5. Shares appropriate experience and knowledge to enhance patient care. (P) 6. Acts as an advocate for patients. 		
 (P) 7. Escalates concerns appropriately when the need arises. 		
COMMITMENT Please choose one statement below	<u>Mentor</u> Please sign in ONE of the boxes below to indicate your choice of statement for this value	<u>Mentor</u> Reasons / evidence for choosing this statement
(F) 1. Displays a negative attitude.		
(F) 2. Behaves in an unprofessional manner.		
(F) 3. Lacks motivation.		
(P) 4. Actively seeks opportunities to develop own learning.		
(P) 5.Valued team member who has gained respect.		
(P) 6. Well motivated and adaptable.		

Statements revised in collaboration with service users and mentors (Sept 2012) amended to reflect 6C's (March 2013) ©Anglia Ruskin University

Appendix 21 Student tablet terms of use Student Tablet Terms of Use

NEED FOR A TABLET

The faculty have agreed to fund the supply to you of a designated tablet for the duration of your c Access to a tablet is a requirement of the teaching on your programme and it is assumed you will have continued access to a tablet throughout your studies. You may be disadvantaged in your studies if you do not have access to a tablet.

If your device is stolen from your practice area, then you should immediately inform the police and get a crime reference number. Please contact the MyProgress helpdesk at <u>MyProgress@anglia.ac.uk</u> and let us know the crime number.

If the tablet is damaged by accident in your placement area please write a short statement authorised by your mentor or the ward manager and contact the MyProgress helpdesk at <u>MyProgress@anglia.ac.uk</u>

In these specific cases we may be able to offer a replacement unit.

Should your tablet be lost/stolen/become unworkable in other circumstances, it should be replaced by you. You will be fully responsible for all costs that maybe be incurred in replacement or repair. We recommend you consider appropriate insurance.

ACCESSIBILITY AND TRAINING

If you have difficulty in using the tablet through lack of training or a disability, please immediately contact our helpdesk <u>https://angliasea.freshdesk.com/support/tickets/new</u>. We will look to support you and overcome any issues. Online training is available for you and your mentor at http://www.anglia.ac.uk/health-social-care-and-education/my-progress/MyProgress-training-course

USING THE TABLET

It is expected that you will use the tablet in your lectures and seminars as well as in your private study. Examples of **acceptable** use in class include:

- Note Taking/Annotating
- Access to mobile learn app to find class resources on the VLE
- Use of tools to aid understanding (e.g., dictionary apps etc)
- Use of internet to research terms/subjects
- Participate in class surveys/polls

It is not acceptable in class for students to:

- Record the session, either via video and/or audio without the consent of the academic teaching the session.
- Correspond via email or instant messaging during the session.
- Access and use social media such as Facebook and Twitter (unless directed by your module tutor)
- Access video or audio files unrelated to the session activities
- Access and use games or other apps unrelated to the session activities

Using the tablet in Practice:

- You will need to take your tablet to your placement to complete your practice competencies.
- Negotiate with your placement area for a safe storage area when at work
- Adhere to the NMC Professional code of conduct in use of the tablet at all times (e.g., you must not record or photograph patients, relatives, patient discussion, notes or any other information/ personal information which breaches patient confidentiality); to do so will be considered a serious offence.

You will use your tablet in a responsible manner, in accordance with the guidelines and instructions of

ARU staff from time to time.

You will be considerate in the use of the tablet, not unduly disturbing or distracting others.

SECURITY AND DATA

You should use the password facility and know where your tablet is at all times, taking necessary precautions to make sure your tablet is kept safe. You should turn your Bluetooth off whenever it is not in use so people cannot locate your device in this way. There have been instances of theft of tablets which have been switched off but where the Bluetooth signal was still on.

FAULTS

If you have any technical problems with your tablet please report it to the MyProgress helpdesk <u>https://aru.ac.uk/business-employers/my-progress</u> Please see <u>http://www.getech.co.uk/</u> for more information on how to raise any concerns you may have about the working of the tablet. The University is merely funding your purchase of the tablet; it is not the retailer or supplier.

NO LIABILITY

The University will not be responsible for any harm or loss caused by the tablet (including those attributable to any "bugs" or other malfunctions).

LEAVING THE UNIVERSITY

If you leave the University under any circumstances you will have to return the tablet. Please inform MyProgress@anglia.ac.uk and your academic tutor.

?-----

I agree to be bound by the above terms.

Student Number:	
Tablet Serial	
Number:	
Print Name:	
Signed:	
Date:	

Appendix 22 Table of counts – challenges in using MyProgress

Open codes	Subtheme	T1	T2	Т3	Τ4	Τ5	Τ6	SFG1 Code count n=3	SFG2 Code count n=8	S4	Number of students / total no. code count	Number of tutors /total no. total code count	Total code count	Total code count for themes
 Challenges in using MyProgress - Fears / Concerns 	Change	0	3	5	1	0	1	1 (S3)	4 (S5,S7,S 8,S10)	0	5/5	4/10	15	56
 Challenges in using MyProgress - Prefer paper 	Change	1	0	0	0	1	0	4 (S1,S3)	4 (S7,S8,S 10)	4	6/12	2/2	14	
 Challenges in using MyProgress -Change process general 	Change	0	1	0	0	1	2	3 (S1,S3)	1 (S10)	2	3/6	3/4	10	
 Challenges in using MyProgress - Students reluctance 	Change	1	2	1	0	0	0	0	2 (S10)	0	1/2	3/4	6	
 Challenges in using MyProgress- new concept 	Change	0	3	0	0	0	0	0	0	0	0/0	1/3	3	
 Challenge in using MyProgress - do not recognise the documents 	Change	0	0	0	2	0	0	0	0	0	0/0	1/2	2	
 Challenges in using MyProgress - negative student attitude impact on mentors 	Change	0	1	0	1	0	0	0	0	0	0/0	2/2	2	
 Challenges in using MyProgress - negative mentor attitude impact on students 	Change	0	0	0	1	0	0	0	0	0	0/0	1/1	1	

Open codes	Subtheme	T1	T2	Т3	Τ4	Τ5	Τ6	SFG1 Code count n=3	SFG2 Code count n=8	S4	Number of students / total no. code count	Number of tutors /total no. total code count	Total code count	Total code count for themes
 Challenges in using MyProgress - transition two systems in place 	Change	0	0	0	0	0	0	0	0	1	1/1	0/0	1	
 Challenges in using MyProgress -denial 	Change	0	0	0	0	0	0	1	0	0	1/1	0/0	1	
 Challenges in using MyProgress tutors -concern that it would make job more difficult 	Change	0	1	0	0	0	0	0	0	0	0/0	1/1	1	
 Challenges in using MyProgress -Digital literacy (general) 	Digital literacy	2	1	4	8	3	2	8 (S4)	20 (S5,S7,S 8,S9,S1 0, S11)	3	8/ 31	6/20	51	92
 Challenges in using MyProgress - predictive text 	Digital literacy	0	0	0	0	3	0	2 (S3)	8 (S7,S8,S 9,S10, S11)	1	6/11	1/3	14	
 Challenges in using MyProgress- Wi-Fi and Syncing 	Digital literacy	3	1	0	0	2	0	3 (S2)	1 (S7)	0	2/4	3/6	10	
• Age - Impact of Age on learning to use MyProgress	Digital literacy	0	2	2	0	0	2	1 (S1)	1 (S10)	0	2/2	3/6	8	

Open codes	Subtheme	T1	T2	Т3	Τ4	Τ5	Τ6	SFG1 Code count n=3	SFG2 Code count n=8	S4	Number of students / total no. code count	Number of tutors /total no. total code count	Total code count	Total code count for themes
 Challenges in using MyProgress - lost assessments 	Digital literacy	0	0	0	0	1	0	4 (S1,S3)	2 (S7,S8,S 10)	1	6/7	1/1	8	
 Challenges in using MyProgress - typing on the tablet 	Digital literacy	0	0	0	0	0	0	1	0	0	1/1	0/0	1	
 Challenge in using MyProgress - time constraints 	Governance	1	0	0	1	3	1	0	4 (S9,S7)	0	2/4	4/6	10	32
 Challenges in using MyProgress- more time consuming 	Governance	0	0	2	1	0	1	2 (S1)	4 (S7,S8,S 9)	0	4/6	3/4	10	
 Challenges in using MyProgress - breach of academic regulations 	Governance	2	0	1	1	0	0	0	0	0	0/0	3/4	4	
 Challenges in using MyProgress - safe storage of tablets in practice 	Governance	0	0	0	0	0	0	0	4 (S5,S8,S 11)	0	3/4	0/0	4	_
 Challenges in using MyProgress - access in Medium Secure Mental Health Units 	Governance	2	0	0	0	0	0	0	0	0	0/0	1/2	2	
 Challenges in using MyProgress – lack of staff 	Governance	0	0	0	0	1	1	0	0	0	0/0	2/2	2	

Open codes	Subtheme	T1	T2	Т3	Τ4	Τ5	Τ6	SFG1 Code count n=3	SFG2 Code count n=8	S4	Number of students / total no. code count	Number of tutors /total no. total code count	Total code count	Total code count for themes
 Challenges in using MyProgress hardware 	Hardware	1	2	2	1	0	1	3 (S2,S3)	10 (S5,S7,S 8,S10)	5	7/18	7/7	25	26
 Challenge in using MyProgress - access to computers in placement 	Hardware	0	0	0	0	0	0	0	0	1	1/1	0/0	1	
 Challenges in using MyProgress - clicking backwards and forwards 	Software	4	0	2	0	6	1	1 (S3)	3 (S5,S7,S 8)	1	5/5	4/13	18	43
 Challenge in using MyProgress - passwords 	Software	0	0	1	0	0	0	0	0	0	0/0	1/1	1	
 Challenges in using MyProgress -MyProgress software issues general 	Software	0	0	0	0	0	1	4 (S1,S3)	5 (S5,S6,S 7,S8,S9)	2	8/11	1/1	12	
 Challenges in using MyProgress - timesheets 	Software	0	0	0	0	0	0	3 (S1)	1 (S8,S9)	0	2/4	0/0	4	
 Challenges in using MyProgress tutors - unsure if documentation is complete 	Software	0	0	2	0	0	1	0	0	0	0/0	2/3	3	
 Challenges in using MyProgress - regenerating forms 	Software	1	0	0	0	0	0	1	0	0	1/1	1/2	3	

Open codes	Subtheme	T1	T2	Т3	Τ4	Τ5	Τ6	SFG1 Code count n=3	SFG2 Code count n=8	S4	Number of students / total no. code count	Number of tutors /total no. total code count	Total code count	Total code count for themes
 Challenges in using MyProgress - no progress tracker on the app version 	Software	0	0	0	0	0	0	0	1	0	1/1	0/0	1	
 Challenges in using MyProgress -Inaccuracies errors in MyProgress 	Software	0	0	0	0	0	0	0	1	0	1/1	0/0	1	

Appendix 23 Table of counts: Governance

	T1	T2	Т3	T4	T5	Т6	SFG1	SFG2	S4	Tutors Total	Students Total	Total
Governance MyProgress - easier to check on student progress	4	4	2	0	0	6	3	0	1	16	4	20
 Governance MyProgress - Secure storage of PAD 	3	0	4	0	4	0	0	2	2	11	4	15
 Governance MyProgress - ability to edit document. 	0	1	0	0	0	0	7	4	2	1	13	14
 Governance MyProgress - improved legibility 	0	0	0	0	1	0	4	6	0	1	10	11
 Governance MyProgress - assessments completed on time 	4	2	1	0	1	0	3	0	0	8	3	11
 Governance MyProgress- more complete documentation 	2	1	1	1	2	2	0	0	1	9	1	10
 Governance MyProgress - managing students from a distance 	3	1	0	0	0	1	0	0	1	5	1	6
 Governance MyProgress-easier to check mentor details 	2	3	0	0	0	1	0	0	0	6	0	6
• Governance mentors - not completing assessments on time	0	0	1	0	1	0	2	0	0	2	2	4
 Governance MyProgress - able to check assessment from previous placements. 	0	0	1	1	0	1	0	0	1	3	1	4
 Governance of MyProgress - prevention of falsification of documentation 	0	0	1	0	1	0	1	0	0	2	1	3
Governance MyProgress - Sharing passwords	1	0	0	0	0	0	0	0	0	1	0	1
Substandard quality of practice assessment	0	0	0	1	0	0	0	0	0	1	0	1

	T1	T2	Т3	T4	T5	Т6	SFG1	SFG2	S4	Tutors Total	Students Total	Total
Quality Assurance - RAG forms	0	1	0	0	0	0	0	0	0	1	0	1
Quality of mentor feedback	0	0	0	0	0	0	0	1	0	0	1	1
Responsibility for completion of assessment	1	0	0	0	0	0	0	0	0	1	0	1

Appendix 24: Adapted Steinaker and Bell's (1979) Taxonomy of Experiential Learning

Disengagement (Grade 0)	 The student fails to show interest during observation of the skill / outcome.
	 The student fails to recognise and action their responsibilities in identifying sources and types of information that may enhance their knowledge of the observed practice.
Exposure	On observing a competent practitioner, the student
(Grade 1)	shows awareness but lacks knowledge and skills.
	 The student demonstrates a willingness to listen,
	observe and ask questions related to the outcome.
	• The student is able to react to the experience and
	recognise their responsibilities in identifying sources and
	types of information that may enhance their knowledge
	of the observed practice.
Participation	Under regular supervision, the student is able to
(Grade 2)	participate in aspects of care related to the outcome.
	In relation to this outcome, the student is able to discuss
	rationale for care and explain their own decisions in care
	delivery. Problem solving with guidance is evident.
	The ability to acquire further information to support their
	practice in relation to this outcome is evident.

	The student shows evidence of safely participating in the
Identification	patient care related to this outcome with less direct
(Grade 3)	supervision. Their ability / attempts to problem-solve in
	relation to this outcome are more prominent.
	The student is able to identify areas of their knowledge
	related to this outcome that need to be developed and
	demonstrates the motivation and skills to address this.
	The student recognises their professional limitations in
	relation to this outcome and seeks advice when
	appropriate.
	The student is able to reflect on previous experiences
Internalisation	and show development of their practice related to this
(Grade 4)	outcome as a result.
	 The student's performance in this outcome is good and
	requires minimal supervision. Professional limitations are
	recognised.
	The student will need little prompting and has the ability
	to consistently use their initiative, based on their previous
	experience and/or level of knowledge.
	The student is able to discuss and apply underpinning
	theory to their practice and consider any discrepancies
	that may exist.

Dissemination (Grade 5)	 The student is proficient in this outcome and is able to act as a role model, demonstrating the ability to teach others (qualified nurses, other qualified allied health professionals, or junior colleagues).
	• The student demonstrates a holistic understanding of the related outcome and is able to apply higher-level skills of analysis, evaluation and appropriate decision making to this outcome.
	 The student may demonstrate the ability to achieve the outcome in complex and unfamiliar situations.

Appendix 25: Evidence of Impact or eOAR Research

1. Appointed as external advisor to the PAN London practice learning group for development of electronic version of the practice assessment document.



Finally, thank you for agreeing to present at the 2nd meeting of the Consortia on Tuesday 2nd October. The meeting is at Senate House in London and if you present for 15 mins and we allow some time for questions. A power point will be available for you to use and we can book your train tickets.

Thank you again for your support so far and I am really looking forward to working with you.

Kind regards Jane

Jane Fish Project Manager - Pan London Practice Assessment Document For Health Education England (on behalf of the London local offices)

Tel: 01732 884 599 Email: J.Fish@mdx.ac.uk 2. Advise to Cardiff University for development or e-practice learning document

From: Mike Johnson [JohnsonMR1@cardiff.ac.uk] Sent: 31 December 2015 10:42 To: Shaw, Sian Subject: MyProress and NMC visit Hi Sian, I hope you're enjoying your holidays... Looking back, I'm very grateful to you, and I'm sure I also speak for the team in RGU Aberdeen, in terms of the trail you've helped blaze for us with MyProgress. Part of that was to be your NMC visit earlier this month... If you have a moment to spare, please could you briefly let me know what they thought of the email 'signature' verification process? I was wondering whether the time is right for setting up some kind of global online MyProgress user forum, I suggest JISCmail... Perhaps one already exists or something near-related might work... A brief search turned up a few less than satisfactory extant lists: for example, https://www.jiscmail.ac.uk/cgi-bin/webadmin?A0=PDP-AND-E-PORTFOLIOUK This is more PDP focussed than we would want... What do you think? Best wishes, Mike

Book an Open Day

http://www.anglia.ac.uk/study/open-day

3. NMC commendation for development of EOAR

Hi All,

I am writing to offer warm congratulations to all of you for achieving a successful approval of our nursing programme yesterday. For those of you unable to stay for feedback, I have summarised the key outcomes below.

Both versions of the BSc (Hons) Nursing, Adult, Child and Mental Health pathways were approved with 3 minor conditions. We are now able to offer the flexible, WBL nursing pathway in all 3 fields, as well as continuing to offer the new version of the full time course from September 2016. We were very pleased to receive 3 commendations. One for our effective partnership with Health Education England enabling the developing of the E-assessment of practice. As many of you will know, Sian Shaw has developed this with financial backing to provide students with tablets etc. from HEE. The e-assessment strategy will be forwarded to the NMC as an example of innovation
in practice, quite a rare achievement the Mott McDonald reviewers informed us yesterday evening. We will be asked to write a summary of it for publication on the NMC website. Additionally we were commended for enhancing the digital literacy of our students and our strategies for supporting student success with our assessment strategy.

It is difficult in this process to single out individuals and as I'm sure you saw yesterday in our demanding sessions with the panel, every individual's contribution is an important element of achieving approval. It was clear to me that our team's collective and evident expertise, enthusiasm and commitment to students and to nursing achieved this excellent outcome, and several external panel members commented on this. Notwithstanding this, I'm sure you will join me in giving a special thanks to Patricia leading this development and for collating our efforts into an excellent curriculum.

Well done one and all and have a very good Christmas and the New Year.

Best wishes

Anne

4. Advise to Edinburgh University for development of electronic practice assessment for medical students.

Reply Reply All Forward

MyProgress and chats with Sian Shaw

GAEDTKE Lee [Lee.Gaedtke@ed.ac.uk]

To:	steve.sidaway@myknowledgemap.com
Cc:	Shaw, Sian
Attachments:	Edinburgh University charitabl~1 (175 B)

07 March 2016 12:16

Hi Steve,

Thanks so much for passing on Sian's information the other day. I had a great chat with her last week and got a lot of useful information.

There was one thing that came up as a parallel in our experiences that I just wanted to make you aware of -

Sometimes, when students are filling in their timesheet, they were putting in 8hrs (on their end), and when it came through to the administrator, it would show as '1hr' or '% hr'. Sian and I have both had this experience, at which the administrator would have to go through the student's timesheets and change each one manually. Sian mentioned that she even had one of her colleagues made a student account, fill in a timesheet just to see if it was a technical glitch or if it was the students just filling in their timesheets incorrectly!

Thanks again for putting me in touch, and thanks Sian for such an entertaining phone call!

Have a great week both.

Kind Regards

Lee

Lee Gaedtke Teaching Support Secretary 0131 651 3972

School of Health in Social Science University of Edinburgh Medical School, Doorway 6 Teviot Place EH8 9AG 5. Advise to Essex University for development of electronic practice assessment

From: Green, Christopher M <cmgreeb@essex.ac.uk> Sent: 20 July 2018 10:02 To: Weeley, Frances <Frances.Weeley@anglia.ac.uk> Subject: FW: ePAD

Hello Frances

Further to this email, I wondered if you were happy for me to re-engage with Sian Shaw to explore ARU's approach...and possibly your learning technology team? I didn't want to approach them without your say-so. I am planning on meeting with our learning technologists again at end of August/early September and it would be good for you/Sian and possibly others from ARU to be part of that discussion.

Best wishes, Chris

From: Green, Christopher M Sent: 20 July 2018 09:59 To: Stuart Higgins (HSC - Staff) (<u>Stuart.Higgins@uea.ac.uk</u>); <u>R.Heathershaw2@uos.ac.uk</u>; Weeley, Frances (<u>Frances.Weelev@anglia.ac.uk</u>); Gary Parlett (HSC - Staff) (<u>G.Parlett@uea.ac.uk</u>) Cc: Lee, Sarah J Subject: ePAD

Hi all

Hope you are well. I am just writing to provide some details related to the preliminary discussions we have started to have at University of Essex regarding developing an electronic platform for the PAD. Given that there may be scope for us to take a collaborative approach with this, I thought it prudent to share details as we go, gather thoughts from your teams, and add it as an agenda item for our meeting on 30th July.

The platforms that were presented at the Nottingham event last month were:

- 1. PebblePad: https://www.pebblepad.co.uk/
- MyKnowledgeMap: <u>https://www.myknowledgemap.com/sectors/medicine-and-healthcare/</u>
- OPALBU (AxiaDigital): <u>http://www.axiadigital.uk/e-assessment-of-professional-and-vocational-skills/our-platform-is-now-being-used-by-other-universities/</u>
- 4. PARE: https://onlinepare.net/

It is likely we will go with one of these products above.

- We are hoping to have procured a platform in time for the start of our new curriculum, due to commence in 2020.
- We have opened discussions with our UoE learning technologists who are looking at what these different platforms offer and trying to gauge costs.
- Our driving principle is usability for students, clinicians and lecturers. Ideally, they would have a single personal login irrespective of the student they are assessing, or the host HEI of that student.
- With this in mind, adopting the platform that ARU use (MyKnowledgeMap) may be beneficial, though we are considering alternatives if we feel there is a better product that offers the same-looking interface.
- We would like to explore the possibility of co-tendering with other HEIs (ARU, Suffolk, UEA seemed a sensible consortium to start with) to increase collective bargaining power and keep costs manageable. I am liaising with our procurement team to see if this is possible or whether there are any institutional barriers to this kind of approach.

With this in mind, I wondered if you might be able to explore with your colleagues at your own institutions just to sense-check whether there is an institutional appetite for ePAD and whether a collaborative approach across institutions is something that would be considered.

6. Advise to University of Hertfordshire development of an E-PAD for Diagnostic Radiotherapy

FW: Diagnostic Radiography & Imaging -Pad interest

Shaw, Si	an
To:	Shaw, Slan
Attachments:	(3) Download all attachments
	Hertfordshire Health and S~1.pdf (80 KB) [Open as Web Page]; MyProgress Reference cont~1.docx (297 KB) [Open as Web Page]; MKM - Organisation Busine~1.docx (217 KB) [Open as Web Page]
	08 May 2017 20:39
To help prot sender and y	ect your privacy, some content in this message has been blocked. If you're sure this message is from a trusted ou want to re-enable the blocked features, click here.

From: Randle, Alan [mailto:a.k.randle@herts.ac.uk] Sent: 29 March 2017 09:54 To: steve.sidaway@myknowledgemap.com; Shaw, Sian <Sian.Shaw@anglia.ac.uk>

Hi Steve, Emelie, Sian

Hoping you all are well. Its been a long time and this is an old email that I am using by way of introduction of my colleague Tracey Nicholls.

I have explained to Tracey how marvellous you all are and how ARU have taken epads to a new level. However, as you will recall UHs previous exploration into e-pad's was not progressed at that time that I was working with you.

I remain enthusiastic and hopeful as Tracey has explained to me that the Diagnostic Radiography and Imaging programmes are being re-validated and there is a hope that the practice modules could be redesigned to include an e-pad.

I have explained to Tracey that there will be cost implications and that she will have to discuss this with her line manager and I remain incredibly enthusiastic of this initiative and approach. Therefore, I will do all I can to support Tracey.

Would you mind if Tracey contacts you directly to discuss e-pads for their radiography programmes?

Please do not hesitate to let me know if you need me to do further. With very many thanks and all the very best, Al Alan K. Randle Associate Dean (Practice Enhancement) School of Health & Social Work University of Hertfordshire Room F 314, Wright Building, Hatfield Campus, College Lane, Hatfield, Herts. AL10 9AB 07930 251 928 Ext. 4370



 Dion Wan <Dion.Wan@soton.ac.uk> Tuesday, 3 December 2019 at 14:32
Shaw, Sian
Show Details

TAKE CARE: this message originates from an e-mail service outside of our University. Do not click on any links or open attachments unless you recognise the sender and are absolutely sure that the content is safe

Dear Sian,

Thank you again for your time today, for spending time with the extended team to talk through your experiences with MyKnowledge Map through to ARU's implementation / support journey. We are so grateful.

It was great to hear your true passion coming across, certainly an advocate when talking about MyKnowledge Map, championing, driven and knew what you were looking to achieve for ARU. It sounds like you've done a great job, albeit I am sure it would have been quite challenging from the start and are now reaping the rewards with all of your good work and to see the benefits of reducing the Nursing students attrition rate from 39% to 7% is a massive accomplishment when looking at the MI data you're currently capturing.

Again, I would like to thank you in advance for taking time out of your busy schedule to attend our workshop / session at UoS in January 2020. It is much appreciated and I look forward to working with you in the future.

Kind regards, Dion

Dion Wan Senior Project Manager Level 5, One Guildhall Square, Southampton, SO14 7FP

Direct: 02380 59 4056 | Internal: 24056 | E-mail: Dion.Wan@soton.ac.uk | www.southampton.ac.uk/isolutions

Appendix 26: Dissemination of findings and prizes/awards

Keynote/invited speaker

Shaw, S. 2016. Overcoming implementation challenges and getting buy-in from clinical staff: In Ohio State University, *Direct observation in clinical assessment.* 29-30 June. Columbus, Ohio, USA.

Shaw S. 2015. E-Practice Assessment: Lessons Learnt. In MyKnowledgeMap User *Engagement.* Robert Gordon University, Aberdeen.

Shaw.S., Evangelinos. G. 2014. Using digital media to assess practice competencies in student nurses. *Placement Assessments in Challenging Environments,* Railway Museum, York.

Conference papers

Shaw S. 2017. Rebooting work-based assessment for the 21st century, Shifting to digital technologies for student nurses. *Annual Conference on Teaching & Learning Assessment.* 13-15 Sept. Drexel University, Philadelphia, USA.

Shaw S. 2016. Qualitative case study – Using an electronic on-going achievement record. Paper accepted for presentation. In: Higher Education Academy, *NET Conference*, 6-8 Sept. Churchill College, Cambridge.

Shaw S. 2016. Using mobile devices to support mentor assessment of student nurse competence in practice, In HEA (Higher Education Academy) *Conference Innovations in Healthcare Education*, Glasgow.

Shaw S. 2015. Using an Electronic E-Portfolio (MyShowcase). *Digifest*, Anglia Ruskin University

Shaw S. 2015. Using mobile devices to support mentor assessment of student nurse competence in practice. *Learning and Teaching Conference*, Anglia Ruskin University

Workshops

Shaw S., 2020. *Implementing an ePAD, Lessons learned*. Electronic Practice Assessment ePAD project. University of Southampton.

Conference organisation/leadership

2016: Electronic Practice Assessment – Nurses and Midwives, Anglia Ruskin University, Cambridge. [Attended by about 100 delegates from across the UK.

Prizes/Awards

2020 Digital innovation of the year Finalist: Awarded by Times Higher Education Award (THE)

2019 Winner Innovation of the Year for MyProgress Project. Awarded by E-Assessment Association

2019 Winner/ Gold award for 'Best Learning Technologies Public and Non-Profit Sector for MyProgress Project. Awarded by Learning Technologies

Re: SHORTLIST NOTIFICATION - THE Awards 2020

From: THE Awards <THEAwards@timeshighereducation.com> Sent: 10 September 2020 06:56 To: Shaw, Sian <Sian.Shaw@aru.ac.uk> Subject: SHORTLIST NOTIFICATION - THE Awards 2020

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Thursday 10 September 2020

Shortlist confirmation

Dear THE Awards entrant ...

We're delighted to inform you that the following entry has been shortlisted in this year's THE Awards

Name: Anglia Ruskin University, in collaboration with MyKnowledgeMap Category: Technological or Digital Innovation of the Year Unique nomination code: OO97XO857LABNX3

You will be able to see the full shortlist here from 0800 today, and by clicking on the name, read a little about each entry. We would ask that you refrain from promoting your news until this full publication (please see below for marketing assets).

While this year's awards differ from previous years in one important way – sadly we are unable to gather in November to celebrate your brilliant work in person – the purpose remains the same: to highlight and champion the very best of the talent and creativity that shines out from our universities.

On the plus side, **registration for this year's (now virtual) ceremony at 1700-1800 on 26 November is free**, and far more of you can experience the excitement first hand (indeed, from a virtual front row seat), than the Grosvenor could ever accommodate. Therefore we hope that the great many colleagues and friends who usually follow proceedings from their sofas (and help **#THEAwards** to trend on Twitter for a couple of hours every year) will register for this one, as well as those of you closely involved with this shortlisted entry.

AWARDS

Technological or Digital Innovation of the Year

Institution name	Anglia Ruskin University in Collaboration with MyKnowledgeMap
Submission title or project name	Using App Based Digital Practice Assessment for Decreasing Student Nurse Attrition
Nominee/key personnel	Siân Shaw
URL	
Submission	High drop-out rates among student nurses is a costly concern for universities and the NHS. Supporting them to successful c ompletion of their studies is especially challenging when they are on clinical placements away from campus. To tackle this, Anglia Ruskin University worked with eassessment software specialists MyKnowledgeMap to develop an app-based platform to track andsupport students' progress while on placement. Using the technology behind MyKnowledgeMap e-portfolio app, MyProgress, ARU's electronic ongoing achievement record (eOAR) is transforming nursing students' placement learning experience. Students can use the app without needing a WiFi connection or computer access, while their clinical assessment can be monitored. This innovative use of technology has contributed to a year-on-year reduction of attrition in ARU's nursing courses to just 5%. ARU's trailblazing approach is now being adopted by other universities, ultimately benefiting the NHS by reducing the costs of attrition and addressing the UK's shortage of qualified nurses.