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THE IMPACT OF AN EXPLICIT, MULTISENSORY, PHONICS INTERVENTION PROGRAMME ON THE PROFESSIONAL DEVELOPMENT OF THE ENGLISH FOREIGN LANGUAGE TEACHER

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ABSTRACT

FACULTY OF EDUCATION

DOCTOR OF PHILOSOPHY

THE IMPACT OF AN EXPLICIT, MULTISENSORY, PHONICS INTERVENTION PROGRAMME ON THE PROFESSIONAL DEVELOPMENT OF THE ENGLISH FOREIGN LANGUAGE TEACHER

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The purpose of the research was to assess the impact of the process of professional development of English foreign language teachers in Israel who participated in the Explicit Multisensory Phonics Intervention Programme. Previous research focused on changes in knowledge, practices, student attainment, and beliefs. Changes from negative to positive self efficacy were not examined, and a model for the professional development of the English foreign language teacher did not exist. The conceptual framework is based on an integration of the concept of self efficacy with theories of professional development and literacy acquisition. Literacy acquisition is based on the knowledge and practice components of the process of professional development in this research. The process of professional development is set in motion by a sense of negative self efficacy. The attainment of content knowledge is followed by a change of practices and thereafter improved student attainment, leading to changes in teachers' beliefs and positive self efficacy. The research questions seek to clarify teachers' incentives for joining the programme, their standard of content knowledge and perceptions of the impact of the process of professional development.

A mixed methods approach was used. The content knowledge of teachers was tested with a pre and post test. A questionnaire about the process of professional development was sent to teachers who had participated in the programme since 1991. Several unstructured interviews were held.

Results showed that the teachers' sense of negative self efficacy and failure in the field initiated their need for professional development. The impact of the process of professional development was: increased knowledge, changed practices and beliefs, claimed student attainment and positive self efficacy.

The research contributes to knowledge by empirically supporting a theoretically based model for the impact of the process of professional development of English foreign language teachers. Positive and negative self efficacy are key factors in the process of professional development and knowledge is the basis of this process. These conclusions have practical applications for teacher training.

Key words: Process of professional development, self efficacy, knowledge, literacy acquisition in EFL

Table of Contents

List of Figures

List of Tables

List of Abbreviations/Acronyms

CK	Content Knowledge
ELLs	English Language Learners
EMPI	Explicit, Multisensory Phonics Intervention
PD	Professional Development
ESL	English as a second language
EFL	English as a foreign language
L2	Second language
FL	Foreign language
L1	First language
LCDH	Linguistic Coding Differences Hypothesis
LOTS	Lower thinking skills
NICDH	National Institute of Child Health and Human Development
NRP	National Reading Panel
PCK	Pedagogical Content Knowledge
PDP	Parallel –distributed processing
PHD	Pupils having difficulties
RTI	Response to Intervention
SES	Socioeconomic status

1. Introduction

The focus of this thesis is the impact of the process of professional development (PD) on English foreign language (EFL) teachers who work with struggling readers. The teachers chose to participate in a programme of PD, because their failure to teach most of the learners left them with a feeling of negative self efficacy. My impressions about the impact that the Explicit Multi-sensory Phonics Intervention (EMPI) programme left on the teachers brought me to undertake this research. No previous research about the process of PD of EFL reading teachers was found in the literature. The research questions focus on the teachers' incentives for participation in the programme, the knowledge they acquired during the PD process, and the areas of impact of the process of PD. In light of these questions the research perspective is post-positivistic and includes a mixed methods design.

1.1 Professional Development

Changes in education are brought about by teachers who have undergone '*high quality'* professional development (PD) (Guskey, 2002) and consequently practice effective teaching methods and maintain a positive sense of self efficacy (Berman, et al., 1997). The professional teacher is constantly looking for new ideas and methods to improve their instruction and advance their pupils. When problems arise they will make an effort to find solutions and improve the situation. They are learners for life and PD is the framework that provides the opportunity. According to Guskey (1986, p.6) PD "… *can expand knowledge and skills, contribute to their* (teachers) *growth and enhance their effectiveness with students.*" It acts as "*the essential mechanism for deepening content knowledge and developing teaching practices"* (Desimone, et al., 2002, p.81). In order for PD to be effective it must be carried out intensely and focus on the knowledge of subject matter (Fletcher and Lyon, 1998; Cohen and Hill, 2001; Garet, et al., 2001; Guskey, 2003; Foorman and Moats, 2004; Garet, et al., 2008). It provides teachers with practices that improve their teaching in the classroom and enables improved student learning (Supovitz and Turner, 2000). Teachers need to acquire understanding of both the pedagogical and content principles that are the underpinnings of new methods and need

time to evaluate their effectiveness and develop new practices (Richardson, 2001; Guskey, 2002; Levy and Murnane, 2004). Knowledgeable and skilled teachers improve student outcomes (Hargreaves and Fullan, 1992). "*Professional development programs are systematic efforts to bring about change in classroom practices of teachers, in their attitudes and beliefs and in the learning outcomes of students"* (Guskey, 1986, 2002, p.381).

When teachers take personal responsibility for their PD it becomes '*self directed*' (Clark, 1992, p.75). In all cases it must meet teachers' personal needs (Lee, 2005). The process is personal and brings about changes in knowledge, practices and beliefs (Fullan, 1982; Treacy, Klieman and Peterson, 2002). Therefore, PD programmes must be planned so that they incorporate the essential characteristics that will make them successful and worthwhile.

According to Guskey (1986, p.7) teacher change is a learning process that is '*experientially based'*. Changes or impact can be left in different areas. Teachers' professional development is composed of several domains (Guskey, 1986, 2002; Garet, et al., 2001; Ingvarson, Meiers and Beavis, 2005; Meiers and Ingvarson, 2005).

They are:

<u>Self efficacy</u> is "*the extent to which the teacher believes he or she has the capacity to affect student performance"* (Berman, et al., 1997, p.137). It serves as means to predict teaching practices that are productive (Goddard, Hoy and Woolfolk Hoy, 2004). Teacher efficacy is the self–perception of teaching effectiveness (Ross and Bruce, 2007), and therefore it can be either positive or negative. Positive efficacy will bring about more effort and better performance (Ashton and Webb, 1986; Ross, 1992), as well as resilience when faced with difficulties (Tschannen-Moran, Woolfolk Hoy and Hoy, 1998). The teachers' sense of efficacy plays an important role in the academic outcomes of the students and influences the teachers' enthusiasm, practices, teaching behaviour and commitment (Tschannen-Moran and Woolfolk Hoy, 2001; Skaalvik and Skaalvik, 2007; Wolters and Daugherty, 2007). Effective teaching practices allow teachers to feel competent (Maeroff, 1988; Lichtenstein, McLaughlin and Knudsen, 1991).

Teacher commitment is the responsibility and devotion that teachers take for their students' learning and behaviour (Park, 2005). Positive commitment improves teacher work performance and advances students' achievement (Kushman, 1992; Graham, 1996; Louis, 1998), resulting in a higher standard of education.

Content knowledge is knowledge of subject matter (Shulman, 1987), and is the prerequisite to skillful teaching. Access to knowledge changes teaching practices (Borko, 2004). Teachers need to consolidate a basis of theoretical subject matter related to the subject they teach.

Change in practices is an important outcome of '*high quality*' PD (Supovitz and Turner, 2000). Practices change when "*…teachers have their current assumptions challenged by the demonstration of effective alternative practice, develop new knowledge and skills, make small changes in practice and observe resulting improvements in student outcomes*" (Timperley, 2008, p. 17). Shulman (1987) emphasizes the need to acquire content knowledge and pedagogical knowledge or how to teach it. When teachers increase their knowledge they change or improve practices and student attainment should improve (Kennedy, 1998; Supovitz, 2001). Teachers need '*hands on*' experiences in addition to content knowledge (Garet, et al., 2001). Therefore, they must be given opportunities to try out new teaching practices.

Student outcomes are made up of "*both cognitive and achievement variables, as well as affective and psychomotor indices of learning. Hence, they might include measures of how well students learn, think, reason and solve complex problems, as well as how they feel about themselves as learners or how they act as individuals*" (Guskey and Sparks, 1991, p.73). Change in student outcomes is the goal and result of effective teacher PD (Munoz, Guskey and Aberli, 2009). As a result of an effective process of PD teachers become knowledgeable and improve student attainment (Darling-Hammond, 2000).

Beliefs are "*…factors shaping teachers' decisions about what knowledge is relevant, what teaching routines are appropriate, what goals should be accomplished and what important features are of the social context of the classroom*" (Speer, 2005, p. 361). When teachers perceive student improvement as a result of the successful application of

innovative practices they change their beliefs. According to Guskey (1986, 2002) and Fullan (1993) changes in beliefs follow changes in practices.

The process of PD that teachers underwent while participating in the EMPI programme left an impact in areas described in several models of PD. Guskey's model of teacher change (1986, 2002) showed the temporal sequence of PD. He explained that teachers must acquire innovative practices to improve their students' attainment. Positive results will bring about changes in teachers' beliefs which are the final outcome, rather than the initial requisite as was previously thought.

The study carried out by Ingvarson, Meiers and Beavis, (2005) and Meiers and Ingvarson, (2005) looked at the effect of structural and process features of PD on teachers' knowledge, practices and self efficacy. They found that the '*opportunity to learn'* features, i.e. *content focus*, *active learning*, and *follow up*, affected the programme outcomes the most. Impact on efficacy had an effect on teachers' practices and student learning.

The Theory of Action for Early Reading PD Interventions Study (Garet, et al., 2008) incorporated the essentials of key features of promising professional development to examine the impact of two intervention programmes on the knowledge and practices of teachers and on students reading achievement. These key features include three structural features, which are duration, form of activity, and collective participation, and three core features, which include focus on content, active learning, and coherence. According to Garet, et al., (1999) the structural features affect the core features and have an influence on teachers' increase in knowledge and skills that change practice.

The integration of these three models and the concept of self efficacy, are the underlying theoretical basis from which the conceptual framework of this research emerged.

1.2 Literacy Acquisition – Knowledge and Practices of Professional Development

Literacy in English is the key to success in the twenty first century. The world has become a global village and in a Hebrew speaking environment it is necessary to learn to communicate in English, and consolidate reading and writing skills. Therefore, the

teaching of English as a foreign language in Israel (EFL) is of paramount importance and must be carried out by knowledgeable teachers. Since reading is the key to knowledge, the teaching of basic literacy in English is one of the most important elements of elementary school education.

Teachers from the field report that too many students enter 7th Grade without consolidating word recognition. They are called 'non-readers' since their reading is below standard and they are unable to cope with reading material taught in class. Some but not all or have been diagnosed as pupils with dyslexic characterisitcs. Consequently, they fall behind and are likely to lose their motivation to learn. Stanovich (1986) introduced the concept called Matthew Effects (i.e. the rich get richer and the poor get poorer) from reading research when English is learnt as the first language (L1). Children who do not master beginning reading in Grade 1 fall behind their strong reading counterparts and the gaps widen so they never read at the expected level, which affects their comprehension. There are no official numbers, but teachers participating in professional development programmes report that they have difficulties coping with the situation. Recent reading research has shown that all BUT 2 to 5 % of children can learn how to read (Adams, 1990; Snow, Burns and Griffin, 1998; Fletcher and Lyon, 1998; Pressley, 1998; National Institute of Child Health and Human Development (NICHD), 2000). They do not read English well enough because they have not been taught efficiently. Roffman (2007) describes these students as PHDs or Pupils Having Difficulties, who, with suitable reading instruction can be taught how to read and even obtain a PhD degree one day. In many cases dyslexia is not the explanation for their difficulties, but rather, inefficient teaching or inadequate methods and lack of knowledge. Today, synthetic phonics is recommended (Johnston and Watson, 2009), which is a structured approach, according to which children are taught a few letter sounds at time and begin to sound out and blend words immediately (Johnston and Watson, 2009). They can read any word with the learnt letters and their progress is fast. As their phonic knowledge increases they apply a self teaching mechanism which allows newly decoded words to become part of their sight word repertoire (Share, 1995).

Despite the research evidence, supporting phonics (Chall, 1967; Perfetti, 1985; Feitelson, 1988; Adams, 1990; Snow, Burns and Griffin, 1998; National Reading Panel (NRP), 2000), there was a shift towards the whole language approach in the latter part of the twentieth century. The approach was influenced by Piaget who suggested that children constructed their own knowledge because they were active learners. The emphasis on reading instruction shifted to meaning based language and literature. Goodman (1976, p.498) felt skills were to be learned incidentally from texts since reading in his opinion is '*a psycholinguistic guessing gam*e.' Reading was considered a natural process and systematic instruction was perceived unnecessary. Unfamiliar words could be identified by inferring their meaning from the context rather than sounding them out. Gradually, it became apparent that the standard of reading was falling (Turner, 1990), and consequently the English speaking countries have incorporated the teaching of phonics since the turn of this century (NRP, 2000; Rose, 2006) at the initial stages of learning to read. The whole language approach remained the preferred method in Israel until 2009.

The teachers who participated in this research had high failure rates and felt incompetent. As they were committed and caring, fully aware of the moral obligation to their students, they took a personal decision and searched for a solution to their difficulties. They looked for an opportunity for PD and joined the EMPI programme. The programme was directed towards the PD of these teachers, who worked with struggling readers and students with dyslexic characteristics. It attempted to provide them with relevant knowledge and practices, so they would be able to deal with the complex reality they faced successfully, and experience positive self-efficacy.

The EMPI offered both knowledge and practical solutions. The remedial approach has always provided a structured order to teaching the letters, based on phonics and incorporating multisensory aids to assure better retention of the material taught. Individual teachers participated in the programme in the hope that this would provide them with an alternative. Teachers found that a variety of these elements improved the teaching of reading in the regular classroom situation as well. They applied their experience and made the necessary adaptations of a one on one intervention approach to their regular classroom situation.

The knowledge base of the teachers who participated in the PD programme was in the area of literacy acquisition. Reading means getting meaning from print (Rayner, et al., 2001). It is composed of two domains that incorporate decoding (*the ability to read words on a page*) and comprehension (*understanding of those words*) (Gough and Tumner, 1986; Hoover and Gough, 1990). Word recognition allows the student to master grapheme phoneme correspondences and to sound out words easily. The spelling process (encoding) promotes word recognition, and strengthens awareness of spelling patterns and spelling sound relationships, needed for reading and writing (Adams, 1990).

The findings of NRP (2000) describe five areas of reading instruction which include phonemic awareness, phonics, fluency, vocabulary and comprehension. The component of knowledge in the process of PD examined in this research included phonemic awareness and phonics. Alphabetic knowledge, and phonemic awareness which falls under the umbrella of phonological awareness, are two skills that are co-requisites for learning to read.

Alphabetic knowledge implied that "*Learning letters is a kind of concept learning providing labels for each letter. Letter names provide labels that help form separate concepts in memory*" (Ehri and Roberts, 2006, p.125). Knowledge of letter names enables the child to learn their sounds with ease. The two should be taught together (Augur and Briggs, 1992). Phonemic awareness, an important aspect of phonological awareness, is the conscious awareness that spoken words are made up of individual speech sound (Walsh, 2009). It is a predictor of reading success in pre-schoolers and Grade one students (Share, Jorm, Maclean and Mathews, 1984). Instruction received in phonemic awareness assures reading success (Bus and van Ijzendoorn, 1999; Ehri, et al., 2001; NRP 2000).

Phonics is "*an instructional approach to developing word identification proficiency*" (Snow, Griffin and Burns, 2005, p.78). It teaches the child to make grapheme phoneme correspondences so that they can decode unfamiliar words. Once they have been exposed to a word several times and have sounded it out "*they may recognize it on subsequent occasions without having to build up pronunciation*" (Johnston and Watson, 2009, p.31).

These areas of reading instruction are essential parts of the knowledge taught in the EMPI programme and conform with recent research findings (Adams, 1990, 2003; Share, 1995; NRP, 2000; Ehri, 2005; Rose, 2006; Johnston and Watson, 2009).

Research has shown that the phonics approach to reading is an effective means of instruction that develops word recognition and comprehension, and enhances spelling (Chall, 1967; Adams, 1990, 2003; Johnston and Watson, 1997; Foorman, et al., 1998; Moats, 2000; Ehri, Nunes, Stahl and Willows, 2001; Ehri, 2004; Medwell, et al., 2004).). Phonics should be taught in an explicit, systematic fashion (Chall, 1967; Perfetti, 1985; Feitelson, 1988; Adams, 1990; Snow, Burns and Griffin, 1998; NRP 2000; Rose, 2006). It enables students to pronounce unknown printed words and acquire a self teaching mechanism. It allows them to analyse and decode words that will become part of their sight word vocabulary, and will lead to faster recognition in the future (Share, 1995). A systematic, explicit phonics approach can be used for the full spectrum of students regardless of their ability (Chall, 1967, 1983, 1996).

Two theories serve at the basis of the component of knowledge in this research. Ehri's (2005) Phase Theory of Sight Word Reading describes the development of sight word reading and the changes the learner undergoes at the different phases. Even though children use a visual approach at an earlier stage (pre-alphabetic phase), as they progress sounds are the underpinning to word recognition as reflected in the full alphabetic phase. Synthetic phonics provides the tools to read unfamiliar words. A Parallel- distributed Processing Schematic of Reading (Adams, 1990, 2003) describes how four processors (phonological processor, orthographic processor, semantic processor and the context processor) interact with each other in mutual coordination for proficient reading and comprehension to come about. The National Reading Panel (2000) and the Rose Review (2006) recommended synthetic phonics as the best method of instruction for the teaching of beginning reading. Knowledge as defined in this research is within the area of synthetic phonics and rests on the two theories and definitions mentioned above.

1.3 Reading in English as a Foreign Language and Intervention

Knowledge is the underlying component of PD and has to be consolidated in order to teach efficiently. As has been described in the previous section it is necessary to evaluate the content knowledge of the EFL teacher.

The ability to read proficiently in EFL is the main reason for learning the language (Carrell, 1992), and is sometimes considered more important than the oral skills (Eskey, 1970). Strong word recognition and fluency facilitate comprehension in L1 (Perfetti, 1985; Perfetti, 1992; Byrne and Fielding-Barnsley, 1995; Wagner and Stanovich, 1996; Stanovich, 2000; Perfetti and Hart, 2001) as well as in a second language (L2) (Geva and Clifton, 1993; Koda, 2005). Therefore, it is necessary to consolidate the lower order thinking skills (LOTS) because they are an essential prerequisite for reading comprehension.

The same cognitive and linguistic skills that are needed for the acquisition of reading in L1 are required in EFL/L2 (Ganschow, et al., 1991; Sparks and Ganschow, 1991; Gholomain and Geva, 1999; Geva and Siegel, 2000; Kahn-Horwitz, Shimron and Sparks, 2005). These include phonological, orthographic, semantic, syntactic and morphological abilities as well as rapid automatized naming or verbal memory. They also affect the acquisition of EFL/L2. Difficulties in any of these areas can lead to reading difficulties (Hung and Zeng, 1981; Mann, 1986; Bowers, Golden, Kennedy and Young, 1994; Bowers, 1995; Geva and Siegel, 2000).

In addition, reading and writing differences in the characteristics of writing scripts, between two languages, can cause reading and writing problems (Lipka, Siegel and Vukovic, 2005). Voweled Hebrew is ‘shallow’ as there is a regular grapheme – phoneme correspondence and the retrieval process tends to be systematic (Turvey, Feldman and Lukatela, 1984; Lindgren, DeRenzi and Richman, 1985; Frost, 1994). English has an irregular orthography and the grapheme correspondence is not predictable. It is considered to be ‘deep’ and the spelling sound relationship is opaque (Frost, Katz and Bentin, 1987). Accurate word recognition skills tend to develop more slowly in languages which have an irregular orthography such as English (Geva, Wade-Woolley and Shany,

1993; Geva and Siegel, 2000). Therefore, EFL teachers need a basic knowledge of phonological awareness, particularly an understanding of phonemic awareness, and alphabetic knowledge

Intervention in EFL - When teachers provide reading intervention to children at risk as early as possible reading performance can be modified (Foorman, Brier and Fletcher, 2003; Schatschneider, et al., 2004). Therefore, struggling readers need teachers who will apply explicit phonics instruction that meets their individual needs (Minskoff, 2005). Teachers should have the knowledge of how to teach phonemic and alphabetic awareness (Byrne and Fielding-Barnsley, 1995; Hatcher, Hulme and Snowling, 2004) in a systematic way, applying a multisensory approach (Kenneweg, 1988; Myer, Ganschow, and Kenneweg, 1989; Sparks and Ganschow, 1991). Intervention programmes should be modified to meet the needs of the EFL learner (Vellutino and Scanlon, 2003; Manyak and Bauer, 2008). The EMPI programme is designed along these underlying principles and the same rationale lies behind the practical teaching.

1.4 The EMPI Programme

The EMPI programme is based on the Hickey Multisensory Language Programme (Augur and Briggs, 1992). It grew out of need from the field to provide intervention in EFL in Israel. At that time (the early 1990's) whole language was the method of instruction, and teachers felt they lacked both the content knowledge and the practices to deal with ‘non-readers’ that were growing in numbers. Student failure brought about a feeling of teachers’ dissatisfaction and negative self efficacy. I developed a PD programme to meet these needs. Teachers who took the EMPI programme participated on their own initiative, as a result of their own personal desire to upgrade their teaching and to find more efficient methods that could improve the situation of their students. From year to year about 12-30 in-service teachers completed the programme, and returned to their classrooms with knowledge of both phonics and multi-sensory teaching. In addition, they were more aware of the difficulties facing children with dyslexic characteristics and other struggling populations, and in some cases began to work as intervention teachers. Since the year 2000 the EMPI programme has become a compulsory programme in

academic teacher training institutions. The programme has been given in Israel for 20 years and hundreds of teachers currently know how to use it.

The EMPI programme provides a multisensory phonics approach to reading intervention. Lessons are success orientated and teaching is explicit. Reading and spelling are taught together and grapheme phoneme correspondences are consolidated. Reading is acquired systematically using a synthetic phonics approach. Gradually sounds are blended into syllables, the syllables into words, words into sentences and eventually into longer prose. The child is never presented with unknown sounds and is instructed in syllable division and morphology. A Ten Point Lesson Plan is used. One sound is taught at a time and is reinforced in different ways.

1.5 Gap in Knowledge and Conceptual Framework

Although different models of PD exist, a survey of recent research did not reveal a model of PD in EFL. Further, existing models of PD do not include the cycle from negative to positive self efficacy. This research attempted to provide a conceptual framework that will close the existing gap in knowledge based on scientific research. The concept of teachers' self efficacy is based on Bandura's social cognitive theory (1993, 1997), which defined it as the beliefs about one's capability to enhance accomplishment. Three theoretical models of the impact of the process of PD were used in the conceptual framework:

1. A model of teacher change (Guskey, 1986, 2002), which provided the temporal sequence where practices change before beliefs, once student attainment improves.

2. A model of relationships between structure, learning processes and impact of PD programmes (Ingvarson, Meiers and Beavis, 2005; Meiers and Ingvarson, 2005), which showed that when teachers undergo PD and there is content focus and active learning, impact is left on the areas of knowledge, practice and self efficacy.

3. Theory of Action for the Early Reading PD Interventions Study (Garet, et al., 2008), which showed that when the key features of promising professional development are

incorporated into a PD programme, teachers' knowledge will improve and they change practices that should lead to better student outcomes.

Further, the components of knowledge and practices in the conceptual model were based on two theories of literacy acquisition. The first is Ehri's Phase Theory of Sight Word Reading (1991, 1994, 1995, 1998, 1999, 2002, 2005), which distinguishers between the phases the learner undergoes in the development of sight word reading, and recommends phonics as the method of instruction. The second is Adams' Parallel Distributed Processing Schematic of Reading (1990, 2003), which describes the interaction between the phonological, orthographic and semantic processors. This enables word recognition, and develops sensitivity to spelling, spelling- sound relationships and word meaning, which are the underpinnings of well designed reading instruction.

1.6 Research Questions

The purpose of this research was to evaluate the impact of the process of PD of the EFL teachers. Three research questions were formulated. The first research question focused on the incentives of the teachers to join the programme. The second question dealt with changes in the teachers' knowledge of as a result of the programme. The third research question concentrated on the teachers' perceptions of the impact of the programme on their professional development, in terms of self efficacy, professional development, knowledge, teaching practices, student outcomes and beliefs.

1.7 Methodology

A mixed – methods post-positivistic approach was carried out in this research. The aim was to determine the extent to which the knowledge of the teachers had improved as a result of the programme, as well as the impact the process of PD left on their self efficacy, knowledge, teaching practices, beliefs and perceived student attainment. Therefore, two questionnaires were administered and four unstructured interviews were carried out. One questionnaire, a quantitative knowledge questionnaire, was given as a pre-test and a post-test to both in-service and pre-service teachers (2004-2008) who participated in the EMPI programme. The second, a qualitatively orientated, self report

professional development questionnaire, was sent by post to all the teachers who had completed the EMPI programme (1991-2005). It included open and closed questions, pertaining to the core dimensions of professional development. Four unstructured interviews were carried out with veteran teachers to deepen the understanding the process of PD of EFL teachers, and search for additional categories beyond the questionnaires.

The structure of the thesis is as follows.

The Literature Review focuses on four main areas.

They include:

- Professional Development
- Literacy Acquisition – Knowledge and Practices of PD
- Reading in English as a Foreign Language
- Reading Intervention.

The conceptual framework describes the cycle of change from negative to positive self efficacy and the three theoretical models of PD and two models of literacy acquisition on the integration of which it is based. It ends with the research questions.

The methodology chapter follows, including the research approach and design, participants, instruments and data analysis. The findings are described in the order of the three research questions combining qualitative and quantitative results. The discussion integrates the findings with the conceptual framework and literature review. Finally, theoretical and practical conclusions are provided.

2. Literature Review

This chapter deals with the four content areas related to the research carried out in this thesis. They include Professional Development, Literacy Acquisition, Reading in English as a Foreign Language and Reading Intervention. Each section describes the underlying theories, recent research and the relevance to the research.

2.1 Professional Development

In this section three models of PD are outlined and their components described. In addition, sources from the literature cast light on the different aspects of the process of PD. I describe the different components of each model and how they are integrated into my innovative model. I show that the cyclic, conceptual model that I developed begins with the teachers' negative self efficacy which goes through knowledge acquisition, change in practices and beliefs when students improve and ends the cycle with positive self efficacy.

2.1.1 Introduction

One of the major challenges facing society in the 21st century is improvement in education. The professional development (PD) of educators has a key role to play in this process (Guskey and Huberman, 1995; Borko, 2004). PD is the "*essential mechanism for deepening teachers' content knowledge and developing their teaching practices*" (Desimone, et al., 2002 p.81). No changes can be brought about successfully without teachers who undergo '*high quality'* PD (Guskey, 2002). Therefore, an integral aspect of teaching is a continual process of learning (Putnam and Borko, 1997; Wilson and Berne, 1999; Borko, 2004). Teachers can improve student attainment if superior teaching is provided in the classroom (Supovitz, 2001). The teacher requires understanding of the pedagogical and content principles underpinning new strategies as well as time to develop and to reflect on new practices (Earl, et al., 2001; Guskey, 2002). The quality teacher must pursue a career of life long learning and through PD evolve as a professional (Polk, 2006) who deepens both knowledge and skills (Garet, et al., 2001).

Therefore, PD programmes must provide support for teacher learning throughout their careers and meet their personal needs, so that they will grow professionally (Lee, 2005).

PD is a process that brings about changes in classroom teaching practices and student achievement (Little, 1993; Darling-Hammond and McLaughlin, 1995; Elmore, 1997; Corcoran, Shields and Zucker, 1998; Ball and Cohen, 1999; Cohen and Hill, 2000; Supovitz, 2001; Timperley, 2008). It is most effective when directly applied in the classroom (Peixotto and Palmer, 1994) and the process is intensive and sustained over a reasonable period of time (Garet, et al., 2001; Guskey, 2003). Therefore, *'reform'* type professional development programmes are currently preferred. They include study groups as well as mentoring and coaching (Garet, et al., 2001). This type of professional development makes connections with classroom teaching and sustains them over time (Garet, et al., 2001). They are more responsive to teachers' learning (Ball, 1996) and have a potential to change teaching practices (Sparks and Loucks-Horsley, 1989; Hargreaves and Fullan, 1992; Little, 1993; Richardson, 1994; Darling-Hammond, 1995, 1996; Stiles, Loucks-Horsely and Hewson, 1996.)

This chapter will provide a definition of PD and describe three empirical models on which this research is based. Each model elaborates on the process of PD and includes major components of this process, yet each model lacks additional characteristics that have been found in research. The CF of this research integrates the three models and adds those characteristics that are lacking.

The three major models that were found in the literature include:

a) Model of teacher change (Guskey, 1986, 2002).

b) Model of the relationship between structure, learning processes and impact of professional development programs (Ingvarson, Meiers and Beavis, 2005; Meiers and Ingvarson, 2005).

c) The Theory of Action for Early Reading PD Interventions Study (Garet, et al., 2008).

2.1.2 Definition

Professional development is considered *''an essential mechanism for deepening teachers' content knowledge and developing their teaching practices"* (Desimone, et al., 2002 p.81). Professional development programmes are "*systematic efforts to bring about change in classroom practices of teachers, in their attitudes and beliefs and in the learning outcomes of students"* (Guskey, 1986; 2002 p.381). Outcomes of PD include the implementation of practices which bring about successful student learning outcomes and changes in teachers' beliefs. Therefore, improvement in students learning outcomes is the outcome of high quality professional development (Meiers and Ingvarson, 2005). Acquired knowledge brings about changes in teaching practices, which lead to improved student learning (Ingvarson, Meiers and Beavis, 2005; Meiers and Ingvarson, 2005).

PD deepens knowledge and skills and is an integral part of the profession of teaching (Shulman and Sparks, 1992; Garet, et al., 2001). Experienced teachers can also become the "*designers of their own personal programmes of self directed professional development"* (Clark, 1992, p.75). Teachers often take responsibility for their own professional development when the system is not providing solutions to problems leaving them with a feeling of negative self efficacy.

Thus, teacher change comes about when teachers learn new things, have time to experiment with the ideas and then to evaluate their effectiveness (Richardson, 2003; Levy and Murnane, 2004). It is a personal process, taking place over a period of time, which leads to a change in beliefs and values (Treacy, Klieman and Peterson, 2002) and alters the way they think and do (Fullan, 1982). Self efficacy plays an important role in PD since it leads to improved student outcomes and affects teachers enthusiasm and the way they teach and their commitment (Tschannen-Moran and Woolfolk 2001; Skaalvik and Skaalvik, 2007). Guskey (1986) explains that this learning process is both experiential and developmental.

2.1.3 Historical Background and Current Affairs

Although staff development has deep roots historically and can be traced back to the 19th century with the initiation of the Teaching Institutes in the USA (Richey, 1957), its development has not been very organized and consistent. In the past criticism was voiced against the failure of these programmes (Corey, 1957; Davies, 1967 cited in Rubin, 1971). During the post depression period professional development in education became important (Howey and Vaughan, 1983). It was assumed that teachers lacked certain skills and knowledge. However, staff development was not beneficial (Corey, 1957; Richey, 1957; Davies, 1967 cited in Rubin, 1971). There was little evidence that staff development led to instructional effectiveness in schools (McDonald and Elias, 1976; Brophy, 1979) and not enough programmes were being taught efficiently. Howey and Vaughn (1983) brought attention to the fact that there was no continuity to the staff development and that assessment was not carried out in terms of student learning outcomes and teacher behaviour. Other reports carried out by Harris, Bessent and McIntyre (1969), Wagstoff and McCullough (1973), Howey and Joyce (1978), Rubin (1978), Flanders (1980), and Wood and Thompson (1980) painted a picture of ineffectiveness and failure as well. Zigarmi, Betz and Jensen (1977) and Doyle and Ponder (1997) found that activities that were not connected to the requirements of the classroom failed to affect teaching practices or student attainment.

In the past a '*one shot'* workshop was provided outside the classroom to enable teachers to master the required skills. A leader or expert provided a structured programme (Loucks-Horsley, Hewson, Love and Stiles, 1998). This approach tended to dismiss '*old*' instructional practices and replace them with a '*new'* version, and has been criticized for its ineffectiveness (Kennedy, 1999). Criticism has been levelled at this type of PD since they make teacher professional development, "*intellectually superficial, disconnected from deep issues of curriculum, and learning fragmented and noncumulativ*e" (Ball and Cohen, 1999, pp.3-4) and does not provide enough content to improve teachers' knowledge that will bring about significant changes in classroom practices (Loucks-Horsley, Hewson, Love and Stiles, 1998).

Therefore, '*reform*' type PD programmes are preferred which usually take place during the school day. Teachers are accompanied by a mentor or a coach who help to consolidate the principles of new programmes or methods (Danielson, 1996; Mundry, Spector and Loucks-Horsley, 1999). This type of professional development makes connections with classroom teaching and sustains them over time (Garet, et al., 2001). It may be more responsive to teachers' learning (Ball, 1996) and changes teaching practices (Sparks and Loucks-Horsley, 1989; Hargreaves and Fullan, 1992; Little, 1993; Richardson, 1994; Darling-Hammond, 1995; Darling-Hammond and McLaughlin, 1995; Darling-Hammond, 1996; Stiles, Loucks-Horsely and Hewson, 1996.)

In the past PD programmes attempted to initially change beliefs and attitudes believing that changes in practices would follow and finally lead to student improvement (Fullan, 1982; Harris, 1980). This approach was based on models of change theories such as Lewin (1935). The rationale was that in order to attain a change in student outcomes it was necessary to initially change teachers' beliefs and attitudes and then their practices. This model demonstrated the implicit purpose of professional development but provided an educational agenda rather than a model of professional development. This approach did not succeed in changing teachers' perceptions or beliefs and practical changes were not carried out in the classroom resulting in student improvement. According to the research this approach is ineffective in so far as the professional development programmes of experienced teachers are concerned (Huberman and Crandall, 1983; Huberman and Miles, 1984; Guskey and Huberman, 1995). Jones and Hayes (1980) found that even if professional development programmes were based on teachers' needs, the outcome was not necessarily a change in attitude and commitment. Very little focus and follow up was provided in the classroom and consequently almost no changes were seen in teaching practices (Little, 1993).

Models of teacher change have undergone changes over the years. Fullan (1982) claimed that the process of teacher change has been overlooked in many professional development programmes. Hargreaves and Fullan (1992) describe teacher development as the acquisition of skills and knowledge as well as the development of self-understanding and social change. The person, the social group and the context where the

process of change is undergone, influence and determine the dimensions. Skilled and knowledgeable teachers will bring about improved student attainment (Hargreaves and Fullan, 1992).

Knowledge is of utmost importance in current models. The quality of teachers' knowledge has been shown to impact student learning (Ferguson, 1991; Ferguson and Ladd, 1996; Darling-Hammond, 2000; Muijs and Reynolds, 2000; Wenglinsky, 2000). If teachers increase their knowledge, they will improve their practices, which will bring about improved student attainment. The process of PD is the means to bring about this outcome (Supovitz, 2001).

Guskey's model of teacher change (1986, 2002) provided an alternative model to past approaches to PD even though it lacks the components of knowledge and self efficacy. This theory was the turning point in the approach to teacher change and in the development of professional development programmes. Guskey (1986) argued that change in teachers' beliefs, held about their didactic practices, came about only after changes in classroom practices brought about improved student learning. I chose Guskey's (1986, 2002) model because it reflects the process of teacher change that the teachers who participated in the EMPI programme underwent. They were provided with practical tools, which led to improved student attainment, which only then resulted in confirmed or changed beliefs. The EMPI programme provided practical tools which proved effective and were maintained over an extended period of time. Once teachers experienced success and overcame their feelings of negative self efficacy when they saw positive student outcomes the key ingredients for a successful PD programme were in place.

Another current model of teacher PD is that presented by Ingvarson, Meiers and Beavis, (2005). It reports on the affects of structural and process features of PD on knowledge, practices and self efficacy.. They based their construct on recent research on PD (Cohen and Hill, 2000; Garet, et al., 2001; Supovitz, 2001; Guskey and Sparks, 2002; Sykes, 2002), which provided characteristics of effective PD programmes. This model includes four outcomes: knowledge (which is missing in Guskey's 1986 model), teaching

practices, efficacy, and student achievement but the component of beliefs is missing. In order for PD to succeed it is necessary to lay down a strong basis of content knowledge and then to incorporate active learning which will lead to change in practices. This model is compatible with my perspective in the EMPI programme.

High quality PD, given over a sustained period of time provides teachers with teaching practices that improve the practical teaching in the classroom and is likely to bring about good student learning attainment (Supovitz and Turner, 2000). The study carried out by Birman, Desimone, Porter and Garet, (2000) on the Federal Government's Eisenhower Professional Development Program, identified three structural features of professional development (form, duration, participation) and three core features (content focus, active learning and coherence) that characterize the process of PD.. They claim that it is the medium for deepening teachers' content knowledge and bringing about the development of teaching practices, so that significant changes will take place in the classroom (Desimone, et al., 2002). Therefore, when '*high quality*' professional development includes certain characteristics, such as an emphasis on content, insights into the way the students learn this content, active, in-depth opportunities to learn and participation in the course over an extended period of time among others, classroom practices are expected to be affected in a positive way (Birman, Desimone, Garet and Porter, 2000; Garet, et al., 2001; Wilson and Lowenberg, 1991) Consequently teachers develop new understanding of both learning and teaching (Garet, et al., 2001). This model lacks the two components of negative and positive self efficacy as well as beliefs. The integration of these three models is compatible with my perspective.

Thus, high quality PD provides a strong basis of knowledge which improves practices that should impact student learning and change beliefs and leads to teachers' positive self efficacy.

In light of the above, my research was based on Guskey's model of teacher change (1986, 2002); a model of relationships between structure, learning processes and impact of professional development programmes (Ingvarson, Meiers, Beavis, 2005; Meiers and Ingvarson, 2005) and the Theory of Action for the Early Reading PD Interventions Study

(Garet, Cronen, Eaton, Kurki, Ludwig, Jones, Uekawa, Falk, Bloom, Doolittle, Zhu and Sztejnberg, 2008). The three of them are specified and criticized below.

2.1.4 A Model of Teacher Change (Guskey, 1986, 2002)

Professional development is a process that aims to change teachers' practices, their beliefs and attitudes and the student outcomes. In order to bring about change the sequence in which its components are changed - in terms of practices, beliefs, attitudes, and student outcomes, is important. Guskey's model (1986, 2002) of change states that teacher change will occur when teachers undergo a process of PD that brings about changes in teaching practices and consequently leads to changes in student attainment. The ultimate result of the process is a change in teacher attitudes and beliefs. The temporal sequence of the outcome is of utmost importance. Guskey based his model on the change model proposed by William James (1890). It describes the temporal relationship that exists between behavioural responses and emotion. This theory was also proposed by Carl Lange (1887) and is known as the James-Lange theory. In Guskey's opinion changes in attitudes and beliefs do not change student outcomes but rather are the outcome. Without student improvement, beliefs and attitudes would not change.

There is a complex relationship between the outcomes that are change in practices, student learning improvement, and change in attitudes and beliefs (Fullan, 1991; Guskey and Sparks, 1996). According to Guskey (2002) it is important to consider the order of outcomes that will bring about change so that the change will be sustained. Therefore, Guskey's model of teacher change (1986, 2002) alters the sequence of outcomes. Changes in attitudes and beliefs take place after the teacher sees improvement in students' attainment (Guskey, 1985, 1986, 1989). However, no mention is made of the importance of knowledge to the process of PD or the significance of teachers' negative self efficacy triggering the process of PD or positive self efficacy being the outcome. Figure 1 exemplifies Guskey's model.

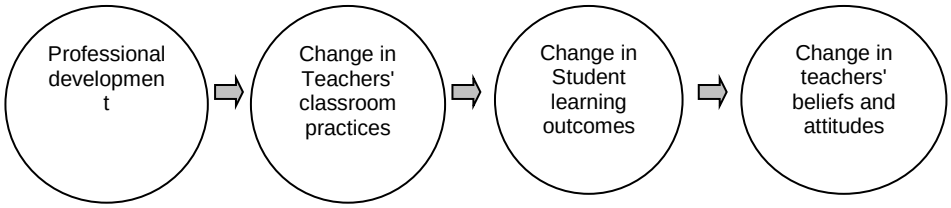

Figure 1 A Model of Teacher Change (Guskey, 1986, 2002)

Research has shown that teachers see their success in terms of student attainment (Harootunian and Yarger, 1980; Fullan and Hargreaves, 1996; Fullan, 1999). Teachers hope to gain practical ideas to carry out in their day to day teaching from professional development programmes (Fullan and Miles, 1992). This usually happens after successful practical application in the classroom of ideas and procedures taught during the professional development course. Successful teaching practices will be retained and the learning outcomes will precede changes in attitudes and beliefs. Prior to participation in the EMPI programme teachers lacked both knowledge and practical tools that could enable them to teach more effectively in the field. Consequently they were left with a feeling of negative self efficacy. They were aware of the lack of student attainment and sought practical solutions that could change the existing situation. The outcome of the change in their classroom teaching led to a change in beliefs and attitudes and brought about a feeling of positive self efficacy.

2.1.5 A Model of the Relationships Between Structure, Learning Processes and Impact of Professional Development Programmes (Ingvarson, Meiers and Beavis, 2005; Meiers and Ingvarson, 2005)

Ingvarson, Meiers and Beavis (2005) reported on how structural and process features of PD programmes affected teachers' knowledge, their practices and efficacy. Their report was based on four studies carried out from 2001-2003 under the Australian Government Quality Teacher Program. Data was collected from 3,250 teachers who had participated in different PD activities. Teachers were asked about the process of their learning experience, and how the programmes had impacted on knowledge, practices, sense of

efficacy and student outcomes. Furthermore, the degree and nature of collaboration among colleagues at their schools was also surveyed. The extent and integration with the professional community served as a predictor of impact.

The research based conceptual framework, of Ingvarson, Meiers and Beavis (2005), which appears below, represents a model of the main features of the programme. It is based on research of the characteristics of effective professional programmes carried out recently (Kennedy, 1998; Loucks-Horsely et al., l998; Hawley and Valli, 1999; Wilson and Berne, 1999; Cohen and Hill, 2000; Garet, et al., 2001; Supovitz, 2001; Guskey and Sparks, 2002; Sykes, 2002).Although the model includes knowledge, practices, student learning and efficacy, negative self efficacy and beliefs were not included in the model

Ingvarson, Meiers and Beavis, (2005) model is presented in Figure 2.

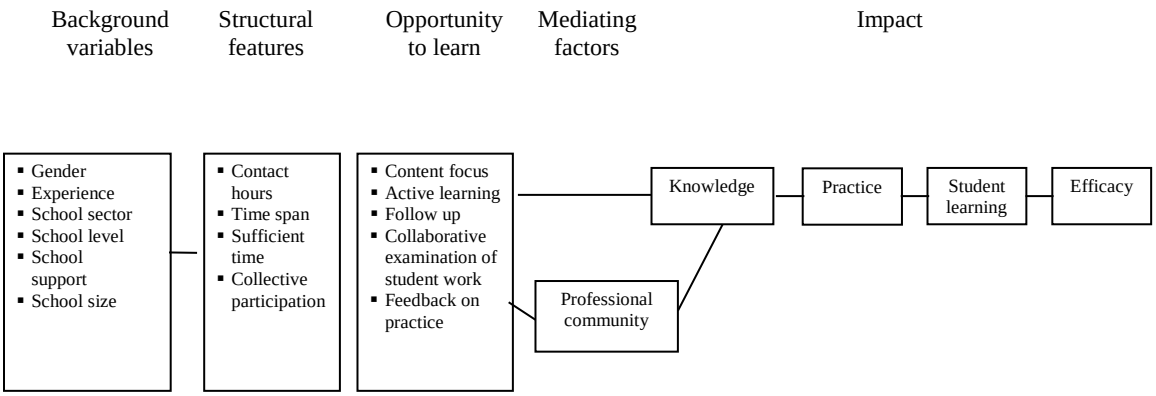

Figure 2 Relationships between Structure, Learning Processes and Impact of Professional Development Programmes (Ingvarson, Meiers and Beavis, 2005; Meiers and Ingvarson, 2005)

The model shows four linked types of impact from PD programmes. They are teachers' knowledge, practices, student learning and efficacy. Background variables, structural features and opportunity to learn features are also included, and described below.

Structural features

The duration of the course includes contact hours and time span (Ingvarson, Meiers and Beavis, 2005). The contact hours related to the number of hours teachers invested in activities related to the course. The time span related to the duration of the course. Ingvarson, Meiers and Beavis (2005) found that 35% of the courses were over six months. This is the approximate length of the EMPI programme (56 hours given over an academic year which is about 7-8 months). Collective participation incorporated the participation of one or more teachers from the same school but did not have any significant impact (Ingvarson, Meiers and Beavis, 2005). Usually, one teacher from each school participated in the EMPI course.

Opportunity to learn

The following characteristics of effective PD were included.

- Content focus
- Active learning
- Feedback
- Collaborative examination of student work
- Follow up

Content focus**:** Content focus is the substance (what) teachers learn during PD. If teachers understand the content and how they should teach it student outcomes are likely to improve (Ingvarson, Meiers and Beavis, 2005).

Active learning**:** Teachers should be actively engaged in their own learning but how they do so is even more important than the level. PD should enable teachers to analyse their practices as compared with good practices and to be able to compare their students' standard of learning with what they should be capable of. Teachers were given opportunities to try out new teaching methods and to reflect on practices (Ingvarson, Meiers and Beavis, 2005).

Feedback**:** According to Joyce and Showers (1982) *feedback* is a vital element of PD because it helps in the development of new skills and their integration into classroom practices. When programmes have a theoretical research basis, are modelled in real settings, and innovative practices receive feedback from a coach or supporting teacher, integration of new skills will succeed. Ingvarson, Meiers and Beavis (2005) found that feedback was lacking. Similarly, the EMPI programme could not provide effective feedback in the classroom situation.

Collaborative examination of students work**:** When teachers collaborate with colleagues in the examination of students work they gain a lot. Hawley and Valli (1999) consider this to be an important component of PD. Little collaboration took place on the EMPI course as usually, one teacher from each school participated in it and few examples of students' work were presented for discussion.

Follow up**:** The need to provide follow up of the application of new practices in the classroom is important for successful PD (Fullan, 1982). Criticism has been levelled at the absence of this support in PD programmes (Huberman and Miles, 1984). This was also lacking in the EMPI programme since the practices were not followed through thoroughly enough.

In sum, out of the five characteristic of *opportunity to learn* content focus and active learning were incorporated thoroughly. Follow up and collaboration were applied only to a certain extent, and feedback was lacking.

Mediating factors

Professional learning communities should be strengthened as a result of PD (Ingvarson, Meiers and Beavis, 2005). In the case of the EMPI programme teachers were part of the study group which served as their professional community. Teachers at the school were of secondary importance since many elementary school teachers are the only English teachers on the staff.

Impact

Four aspects of impact are included in the model (Ingvarson, Meiers and Beavis, 2005): the impact on teachers' knowledge and practices, impact on student learning outcomes and efficacy. These outcomes of PD programmes were based on standards for effective teaching (Ingvarson, 1998; Ingvarson, 2002).

Ingvarson, Meiers and Beavis (2005) found that the block of opportunity to learn had the strongest effect on the programme outcomes. Content focus, active learning and follow up provided the most consistent effects. Active learning influenced teachers' practices and efficacy and enabled teacher to meet students' needs. Their finding of a strong relationship between the *content focus* and the impact on practice correlates with the results of research carried out by Joyce and Showers, (1982), Cohen and Hill, (2000), together with reviews by Kennedy, (1998) and Hawley and Valli, (1999). All argue that if PD programmes are to be effective they must provide a strong knowledge basis and a theoretical rationale based on research. The teachers' sense of self efficacy will improve if they feel that their teaching practices have improved and brought about better student attainment (Ingvarson, Meiers and Beavis 2005). The strongest influence on self efficacy in the studies reflected the influence of teaching practices on self competence which was seen in improved student learning outcomes. This is the same as the findings of Guskey's (1985) research. Guskey argued that if teachers change their practices and see student learning improvement they will eventually change their beliefs. Although *feedback* and *collaboration* are important (Hawley and Valli, 1999) they had the least influence in the study. *Follow up* providing support in the classroom in the carrying out of innovative practices was found to be significant and reflected by the teachers' feeling of increased knowledge (Ingvarson, Meiers and Beavis, 2005).

The importance of school context was also found to be consistent with other studies. This research showed that it is not enough to provide PD outside the school but rather to see that PD programmes are given within the school framework. The professional teaching community plays a role in bringing about change and should not be overlooked (Ingvarson, Meiers and Beavis, 2005).

In another study carried out by Meiers and Ingvarson, (2005) that investigated the links between PD and student learning outcomes they concluded that it is necessary to carry out longitudinal studies in order to determine if student learning outcomes have improved. Improvement in students' learning provides an incentive for the adoption and development of new practices. This correlates with Guskey's (1986, 2002) claims in his model. They also concluded that PD programmes must place a strong emphasis on content as well as follow up, active learning, feedback and professional community and then there is a possibility of increased student attainment. Therefore, student learning outcomes should be kept in mind as the outcome of effective PD programmes and be incorporated in their planning. They provide incentives for the adoption of new practices.

In conclusion, the study carried out by Ingvarson, Meiers and Beavis (2005) showed that the structural and process features left impact in four areas. The *opportunity to learn* block affected the outcomes the most and had a direct effect on knowledge. Content focus affected practices which lead to improved student learning outcomes and teacher efficacy. The CF of my research also included positive self efficacy as the outcome of the process of PD and added change in beliefs as described by Guskey (1986; 2002) which is excluded in Ingvarson, Meiers and Beavis (2005) model. In my CF the process of PD was initiated by the teachers' feeling of negative self efficacy.

2.1.6 Theory of Action for the Early Reading PD Interventions Study (Garet, et al., 2008)

The U.S. Department of Education commissioned the Early Reading PD Interventions study in order to be able to make better decisions about PD related to reading instruction. The study was carried out in 90 schools in six districts and incorporated 270 second – grade teachers. The aim was to test the effectiveness of two year long PD interventions and to see if there was improvement in teacher knowledge of reading principles, reading instruction and reading achievement. A model of the Theory of Action of Early Reading Interventions Study (Garet, et al., 2008) was developed based on the literature. It incorporated the characteristics of effective PD described by Garet, et al. (2001).

Garet, et al. (2001) developed a model based on data collected as part of a national evaluation of the Eisenhower PD Programme. The study examined the relationship between features of PD identified in the literature, as well as self-reported changes in teachers' knowledge and skills and their teaching practices. The outcomes confirmed the importance of emphasis on subject-matter which led to changes in practices.

The model is composed of three structural features– *duration, form of the activity,* and *collective participation,* which relate to the organization of the PD and enable the implementation of the core features. The core features are – f*ocus on content*, i.e., focus on what is taught, *active learning*, i.e., opportunities to make a connection between practice and learning, and *coherence* among the goals of PD, the teachers individual goals as well as the assessments and standards that should guide teachers' practices (Garet, et al., 2001). Structural activities of PD affect the core features and influence the teachers' growth in knowledge and skills, which leads to changes in practices (Garet, et al., 1999). This development leads to improved student outcomes which is the main objective of PD (Birman, Desimone, Porter and Garet, 2000).

In the study carried out by Garet, et al. (2008) on *'The Impact of two Professional Development Interventions on Early Reading Instruction and Achievement'* they developed a model, which included *Key Features of Promising Professional Development*. These key features were described in other studies (Garet, et al., 2001; Desimone, et al., 2002). The results of their study showed positive impact on the knowledge of scientific based reading instruction as well as on one of the reading practices taught. This model is relevant to my research since it incorporates the three core and three structural features found to be effective in the process of professional development. However, the model lacks beliefs and does not include negative or positive self efficacy.

Their model is demonstrated in Figure 3.

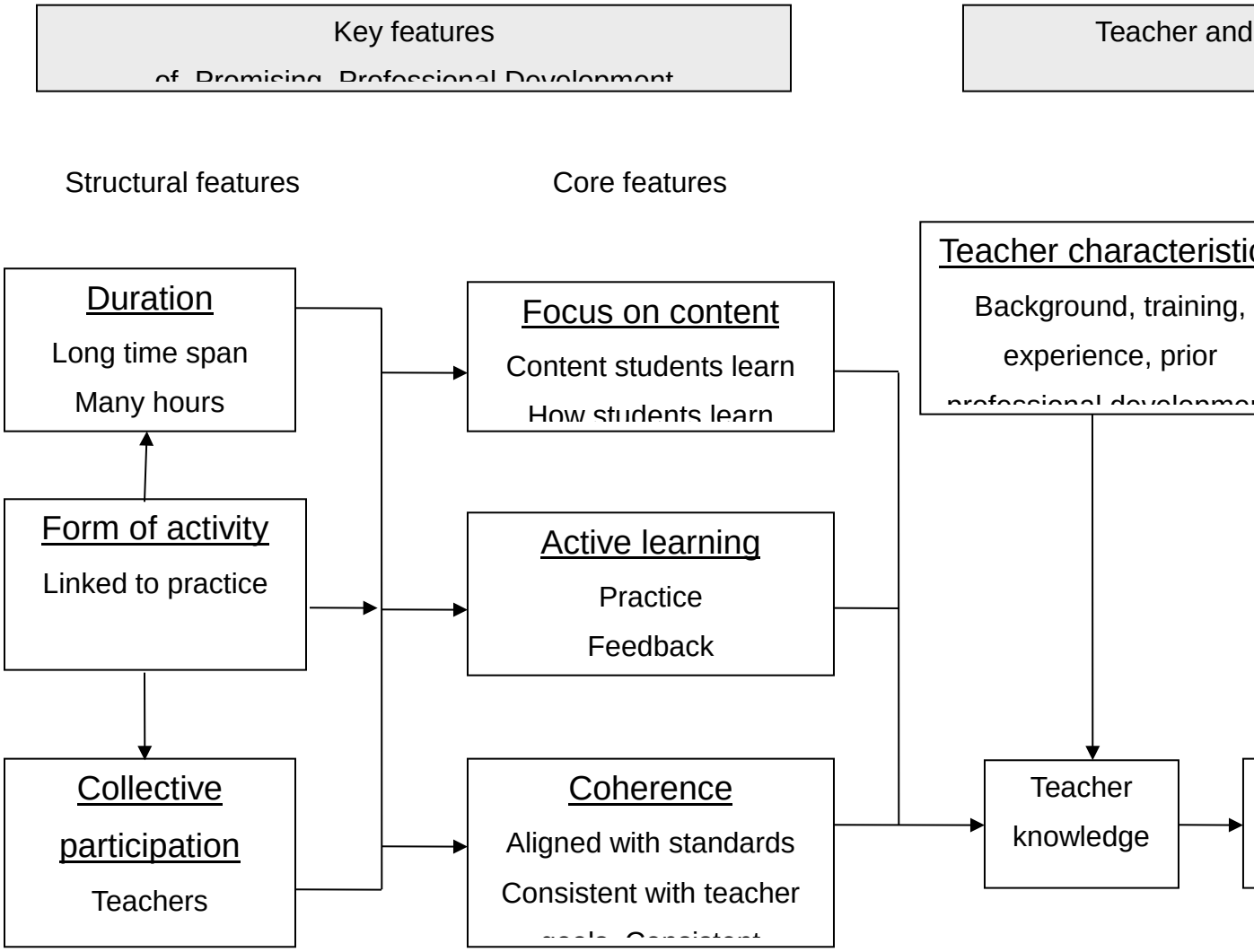

Figure 3. Theory of Action for the Early Reading PD Interventions Study (Garet et al., 2008)

Structural features - The features that set the context for professional development

Duration- the time span allotted to the effort a well as the number of hours: Professional development should be carried out over a sustained period of time. This will allow discussion of conceptions, misconceptions or strategies and enables teachers to try out

new practices in the classroom and get feedback (Garet, et al., 2001; Desimone, et al., 2002; Speck, 2002). Both the time span and the number of hours have been connected with opportunities to learn (O'Connnor, 1999; Cohen and Hill, 2001; Garet, et al., 2001).

The duration of professional development is also related to how deeply teachers undergo change (Shields, Marsh and Adelman, 1998).

Form of activity (The organization): The reform type PD (using study groups, regular school day meetings during the process of classroom instruction or planning time), as opposed to traditional workshops or seminars, enables teachers to connect with classroom teaching. There is evidence that suggests that professional development activities related to daily school work will bring about active learning and lead to coherence of activities. The activities include mentoring, coaching or in-school discussion groups. They may lead to sustained professional development over time (Hargreaves and Fullan, 1992; Little, 1993; Garet, et al., 2001).

Collective participation: This incorporates groups of teachers either from the same school, department or at the same grade level or subject, so that collegial development can take place. This helps sustain change over time (Garet, et al., 2001). Support from fellow teachers, parents or school administrators, help teachers deal with difficult learning processes and affect their practices (Talbert and McLaughlin, 1993; Ball, 1996; Knapp, 1997; Elmore, 2002) This may lead to the maintenance of enthusiasm and brings about lasting change (Belcastro and Isaacson, 1992).

Core features – features that characterize the process that occurs during professional development

Focus on content: The focus is on what students need to learn and how they learn it. This will improve teachers' knowledge and practices that will bring about improved student achievement (Kennedy, 1998; Cohen and Hill, 2001; Garet, et al., 2001). Corcoran (1995) suggests that if professional development focuses on subject- matter content and the way children learn, it may then lead to changes in teaching practices. Creation of new

instructional materials that meets student needs is a means of turning theory into practice (Louckes-Horsely, et al., 1998).

Opportunities for active learning: Active learning allows teachers to observe others and be observed while teaching (Garet, et al., 2001), and to apply what they are learning in their classrooms. It also includes simulations of teaching situations, collaboration and review of students' work with other teachers, as well as reflection about their individual learning (Loucks-Horsely, et al., 1998; Garet, et al., 2001).

Coherence: In order to bring about changes in practices and beliefs, the teacher should undergo a learning experience that will enable him/her to relate it to the needs of the classroom as well as the curriculum (Garet, et al., 2001; Kinnucan-Welsh, Rosemary and Grogan, 2006). Standards, assessment and curriculum should provide coherent goals. If there is conflict teachers may not develop their teaching in the required direction (Grant, Peterson and Shojgreen-Downer, 1996). When teachers are afforded the opportunity to communicate with others who are involved in carrying out professional development activities coherence is felt (Lieberman and McLaughlin, 1992; Cohen and Hill, 1998; Garet, et al., 2001).

In their study, Garet, et al. (2001), measured the effects of professional development programmes, using the above mentioned features, on teachers' knowledge and skills, and teaching practices. They found that duration of the professional development was significant since longer courses left a more sustained impact. Furthermore, if the focus is on subject matter (content) and teachers have opportunities to carry out practical 'hands-on' application (active learning) and incorporate what they learn into their teaching routine (coherence), knowledge and skills will improve. They also found that reform outcomes were better because they were taught over a longer period of time, and that focus on duration, collective participation and all three core features improve professional development. In addition, activities connected to teachers' past experiences, or aligned with efforts of reform which emphasize professional communication, apparently support changes in teaching practices.

Similarly, Desimone, et al. (2002) reported that they found that if focus was placed on certain practices teachers applied them in the classroom. Moreover, features such as active learning opportunities left an effect on teachers' instruction, thereby increasing the effect of professional development particularly when the whole school staff participated.

It should be noted, that this model does not relate to teachers' beliefs or the impact left on their self efficacy. These basic parameters of the process of PD are not included..

2.1.7 Empirical Evidence

Empirical evidence has supported the three models described above (Guskey 1986, 2002; Garet, et al., 2001; Ingvarson, Meiers and Beavis, 2005; Garet, et al., 2008).

Guskey's model of teacher change has been supported by many studies. Bolster's (1983) ethnographical studies showed that new ideas and teaching principles were accepted by teachers who saw that these had a positive effect on their students. In addition, in a study of the implementation of new teaching practices (Crandall, 1982) it was found that even though teachers were involved in decision making and problem solving before they implemented innovations, these innovations were not effective. Teachers became committed to methods only after successful application in the classroom showed student improvement (Crandall, 1983). Fullan (1985) summed up the results of Huberman's study (1981) of teachers involved in the Exemplary Center of Reading Instruction (ECRI), by saying that changes in behaviour were followed by changes in attitudes and beliefs and general understanding, rather than vice versa. Both Guskey (1979, 1982) and Huberman and Miles (1984) recorded the use of innovative instructional practices of teachers, their attitudes and beliefs, and the effects of professional development, separately. Guskey's (1984) study on mastery learning showed that teachers implemented learning procedures and saw student improvement. Therefore, teachers' attitudes and beliefs underwent change after they saw that the implementation of new practices led to improved student learning. Further, results reported by Loucks-Horsley, et al. (2003) provide support for Supovitz and Turner (2000) who found that in order for changes to be innovated, practical application of the new skills must be carried out in addition to learning, practice and interaction. The study carried out by Broaddus and Bloodgood,

(1994) on the reading intervention programme, carried out at the Roosevelt Elementary School, exposed teachers to new strategies but also reaffirmed their previous beliefs about how to teach reading. The one-on-one teaching situation enabled them to carry out teaching practices and deepen their understanding of reading instruction. Their understanding of difficulties facing struggling readers deepened and they made a direct application to their teaching in the regular classroom. They regarded their experience as a process of professional development. Teachers received on-going professional support and focused time, and the way they perceived remediation and their students' attainment changed. This led to changes in their remedial teaching and the way they taught in the classroom. Therefore, only when teachers carry out the practical application of what they have learned, and witness changes in student attainment, will they accept new practices and change their beliefs. Lowden (2006) used Guskey's model of teacher change in a study carried out in 11 public schools in New York. PD was also evaluated by looking at changes in knowledge, practices, student attainment and changes that came about in the attitudes and beliefs of the teachers. The results revealed both the improvement of student learning and academic attainment. Andreasen, Swan and Dixon (2007) said that PD programmes should bring about changes in teachers' practices In their study on nine elementary public school mathematics teachers, they provided content specific knowledge in addition to practical ideas to apply in the classroom. The results showed that the teachers underwent a process of change consisting of four different stages. These stages included resistance to change, talking about change, mimicking and finally changing practices in their classroom environment. The results showed that most participants reached the final stage of changing practices in the classroom and almost all were talking about making changes or were at the third stage of mimicking. Many of the teachers lacked enough pedagogical content knowledge and needed more instruction in this area. The process of change was initiated by a change in practices here, but more pedagogical content knowledge was needed before student attainment could be seen. The study carried out by Ingvarson, Meiers and Beavis (2005) showed that impact was left on practices. This echoes the findings of Guskey (1985). They also found that when practices changed and student outcomes improved self efficacy underwent a positive change.

Meiers and Ingvarson (2005) carried out a project to investigate the connection between PD and student learning outcomes. They based their study on several models (Sykes, 2002; Supovitz, 2001; Garet, et al., 2001). The results showed that teaching practices did not change if the PD course was not of a reasonable duration. They concluded that several key features such as active learning for teachers, and emphasis on content must be incorporated in order for an impact to be left on teaching practices and student learning.

Garet, et al., (2008) applied the same model and examined the impact of two PD interventions on the knowledge and practice of teachers, and reading achievement of students studying at high poverty schools. The results showed that after a year's intervention there was positive impact on teachers' knowledge of scientifically based reading instruction and on the use of an explicit approach to reading in the classroom. However, there was no significant increase in student test scores.

2.1.8 Critical Evaluation of the Three Models of PD

Research has been conducted to identify how professional development programmes improve teaching. Three models have been described. Guskey, 1986, 2002, Ingvarson, Meiers and Beavis, 2005 and Garet, et al., 2008. According to Guskey's model the process of PD starts with changes in practices which lead to student attainment and finally change in beliefs. Ingvarson, Meiers and Beavis (2005) present a similar model but include the impact of PD on self efficacy. Garet et al. (2008) confirm the necessity to consolidate knowledge which leads to change in practices and eventually to improved student academic attainment.

The review of the three models provides insight into the weaknesses of each model.

Guskey's model (1986;2002) describes the process of PD beginning with changes in practices prior to beliefs. He does not include knowledge or self efficacy as part of his model. He overlooks the importance of knowledge acquisition as the initial stage for the whole process of PD. Changes in practices are dependent on basic content knowledge and are not incorporated (Garet, et al. 2001). Knowledge is the initial phase of the process of professional development(Shulman 1987), Teachers will not undergo any changes in

practices before they consolidate a strong knowledge basis related to the subject they teach. (Garet, et al., 2001; Borko, 2004; Ingvarson, Meiers and Beavis, 2005; Garet, et al., 2008). Teachers experience positive self efficacy when practices are effective and student attainment improves (Goddard, Hoy and Woolfolk Hoy, 2004). Therefore, positive self efficacy is a yardstick of the success of effective PD.

The model described by Invargson, Meiers and Beavis (2005) has most of the basic components of an effective programme of PD. However, beliefs are not included in the areas of impact. Change in beliefs is part of the process of PD (Guskey, 1986, 2002) should be part of any model since beliefs are critical for the understanding of teachers' practices (Luft and Roehring, 2007) and the way they conduct their teaching and management of their goals and objectives. Beliefs will be sustained if student academic outcomes are improved (Guskey, 1986, 2002).

Garet, et al. (2008) describe a model that begins with knowledge acquisition leading to changes in practices and finally to student academic outcomes. No reference is made to the self efficacy of the teachers or change in beliefs. The impact of a PD programme on the self efficacy of the teachers is a crucial element of the process (Ingvarson, Meiers and Beavis, 2005) and this is a weakness of the model. A teacher who has positive self efficacy will apply productive teaching practices that bring about student achievement. This in turn will affect their beliefs about their ability to teach effectively

In sum, three models of the process of PD were described. Each has been empirically examined and includes the major components of PD. In each case mention was made of the characteristics missing. The CF of this research is built on the integration of all these models.

Following is a description of the main dimension, of these models: Self efficacy, knowledge, teaching practices, student outcomes, and teachers' beliefs.

2.1.9 Teacher Sense of Self Efficacy

According to Bandura's (1977) social cognitive theory both *outcome expectations* and *efficacy expectations* affect behaviour. He claimed that outcomes are the result of actions

carried out by individuals and are determined by their anticipation of their ability to carry them out well in a specific situation. Efficacy expectations are the beliefs of an individual about his/her capability to attain a certain level of performance in that context or situation. Therefore, "*..a strong sense of efficacy enhances personal accomplishment*" (Bandura 1993 p.144). Social learning theorists (Bandura, 1977; Bandura 1989; Schunk, 1989; Zimmmerman, Bandura and Martinez-Pons, 1992) say that self efficacy is a sense of confidence connected to the performance of a certain task, therefore it may affect aspects of behaviour that are related to teaching and learning. For the student a successful experience will boost self efficacy whereas failure erodes it (Bandura, 1977; Bandura, 1997).

Many researchers and scholars have debated the meaning of teacher efficacy (Gibson and Dembo, 1984; Guskey, 1987; Guskey and Passaro, 1994; Pajares, 1997; Tschannen-Moran, Woolfolk Hoy and Hoy, 1998). A teacher's "*sense of efficacy is a significant predictor of productive teaching practice*s" (Goddard, Hoy and Woolfolk Hoy, 2004, pp. 3-13). Teacher efficacy is not an objective measure of teaching effectiveness but a self – perception (Ross and Bruce, 2007).

The teacher's efficacy is context specific and is powerful. It is cyclic in nature, and affects how much effort teachers put into their teaching as well as their level of aspiration and the goals they set for themselves (Woolfolk Hoy and Burke Spero, 2005). Teachers' self efficacy reflects the beliefs they have about affecting student outcomes and influences the daily lives of both teachers and students (Klassen, et al., 2009). There is a connection between teacher efficacy and teacher behaviours that may improve student achievement (Tschannen-Moran, Woolfolk Hoy and Hoy, 1998). Therefore, high efficacy will bring about more effort and persistence resulting in better performance which may lead to stronger student outcomes (Ashton and Webb, 1986; Ross, 1992). The results of research have provided support for Bandura's (1977) social cognitive theory that a teacher's self efficacy beliefs are connected to the amount of effort that teachers put into their teaching, which goals they set, their persistence when things do not go as planned, and the fact that they show resilience when faced with set backs (Tschannen-Moran, Woolfolk Hoy and Hoy, 1998).

Measured in different ways, a teacher's sense of self efficacy leads to planned and organized classroom strategies (Allinder, 1994) which are student centred (Czerniak and Schriver, 1994; Enochs, Scharman and Riggs, 1995). In addition, several studies show that there is a positive connection between a teachers' sense of self efficacy and student achievement because these attitudes and approaches are educationally productive (Armor, et al., 1976; Gibson and Dembo, 1984; Ashton and Webb, 1986; Andersen, Greene and Loewen, 1988; Ross, 1992; Ross, 1994). A teacher's perceived efficacy influences both the learning environment which is created for the student, as well as the judgments of the different tasks performed which lead to student learning (Bandura, 1993; Bandura, 1997). It affects both their instructional practices as well as the orientation they adopt towards educational processes (Woolfolk and Hoy, 1990).

The teachers' sense of efficacy plays an important role in the academic outcomes of the students, and influences teachers' enthusiasm, practices, teaching behaviour and commitment (Tschannen-Moran and Woolfolk Hoy, 2001; Skaalvik and Skaalvik, 2007; Wolters and Daugherty, 2007). According to Gibson and Dembo (1984) there are significant differences between high efficacious teachers and low efficacious teachers.

Teachers who plan, organize and tend to be enthusiastic, have a strong sense of efficacy Allinder (1994). They are more willing to try out new or innovative methods that meet the needs of their students (Guskey, 1988; Stein and Wang, 1988; Berman, et al., 1997) if they feel they will improve student outcomes (Guskey, 1988; Stein and Wang, 1988; Cousins and Walker, 2000). If things do not go smoothly they are able to face the difficulties (Tschannen-Moran and Woolfolk Hoy, 2001). According to Gibson and Dembo (1984) they work longer with struggling pupils. They show commitment to teaching (Trentham, Silvern and Brogdon, 1985; Evans and Tribble, 1986; Coladarci 1992). When faced with difficulties they tend to be persistent and their efficacy beliefs enable them be resilient and overcome setbacks (Gibson and Dembo, 1984). Research has shown that they have a greater chance of staying in the profession (Glickman and Tamashiro, 1982; Burley, Hall, Villeme and Brockmeier, 1991; Wolters and Daugherty, 2007) and experience job satisfaction (Klassen et al., 2009). Teachers with a high sense of efficacy tend to adopt innovations (Guskey, 1988; Gaith and Yaghi, 1997) and help

low achievers, take responsibility for students who have special learning needs (Allinder, 1994). They use their time better, and are less critical of their students' incorrect response (Coladarci, 1992). On the other hand, low efficacy teachers tend to spend more time on non academic activities (Gibson and Dembo, 1984) and show less commitment to the profession.

The impact PD left on teachers' practices and student outcomes was found to have a strong connection to the impact on teachers' sense of efficacy (Ingvarson, Meiers and Beavis, 2005). Aspects of student outcomes that have been related to teachers' sense of self efficacy include student achievement (Armor et al, 1976; Hall, Burley, Villeme and Brockmeier, 1992; Moore and Esselman, 1992; Ross, 1992; Ashton and Webb, 1996), student motivation (Midgley, Feldlaufer and Eccles, 1989), and the student's own sense of efficacy (Anderson, Greene and Loewen, 1988) and teaching strategies (Fenci and Scheel, 2005).

Teachers who undergo PD and increase their knowledge and practices, master new ideas and are likely to increase their self efficacy. The findings of Fritz, et al. (2001) and Yost (2002) showed that increase in teachers' self efficacy was associated with teacher training. This backs up the fact that efficacy for specific tasks is increased through enactive mastery experiences (Bandura, 1997; Labone, 2004) when experienced teachers are exposed to competent teaching models, or learn from colleagues through observation.

In sum, a teacher's high self efficacy predicts productive teaching practices. It reflects their beliefs about their capability to attain a certain level of student achievement which is the outcome of PD. Lack of positive student outcomes and the inability to teach well, leaves teachers with a feeling of incompetence and negative self efficacy. This negative self efficacy may stimulate teachers to find solutions to their difficulties in the field and refer themselves to a framework providing an efficient process of PD

2.1.10 Knowledge

Shulman says:

"*Those who can, do. Those who understand, teach.*" (1986b, p. 14).

High quality professional development targets the professional growth of the individual teacher and provides access to different kinds of knowledge which change their teaching (Garet, et al., 2001; Borko, 2004; Ingvarson, Meiers and Beavis, 2005; Garet, et al., 2008). Shulman (1987) identified the acquisition of different types of knowledge as being necessary for the development of expert teaching. Teachers must be provided with the knowledge of their subject matter (content knowledge) and how to teach it (pedagogical content knowledge) so that they will be enabled and know how to improve the learning outcomes of their pupils. This is achieved when they undergo PD and incorporate this deeper knowledge into their personal teaching practices (Hargreaves and Fullan, 1992; Garet, et al., 2001; Ingvarson, Meiers and Beavis, 2005; Garet, et al., 2008).

Content knowledge

Teachers are professionals who fall back on a good background of knowledge to provide interesting and effective lessons (Krishnaveni and Anitha, 2007). In order to teach something one has to understand the material. This is known as content, or subject, knowledge (Shulman, 1986b) and is a prerequisite to teaching. Reading teachers need to develop an understanding of the linguistic features of both language and text (Phelps and Schilling, 2004).

Specialized linguistic knowledge is also necessary for initial reading instruction. Teachers of reading need knowledge of the letters of the alphabet and their sounds in order to be able to teach children how to decode efficiently without guessing. Moat's study (1994) revealed that teachers lacked understanding of specific features of the English language such as spelling patterns, phonemes, affixes and others and this hindered efficient teaching of the beginning of reading. There is mounting evidence that beginning readers benefit when they are given the opportunity to learn about language and other text elements that make up words (Adams, 1990: Ehri, 1991; Share and Stanovich, 1995; Snow, Burns and Griffith, 1998; NRP 2000).

Research in the content area of beginning reading has shown that knowledge of text and language is needed in order to teach children how to decode words (Moats, 1994, 2000; Moats and Lyon, 1996; Brady and Moats, 1997; McCutchen and Berninger, 1999;

National Board for Professional Teaching Standards 2001; McCutchen, et al., 2002; Wong- Fillmore and Snow, 2002). Knowledge of phonological awareness and phonics is necessary for the acquisition of reading. The research carried out by Moats (1994, 1995) and Bos, et al. (2001) showed that teachers lack this knowledge. Yet, once teachers underwent PD and their understanding of spelling patterns and phonology improved, their instructional practices in the classroom became more effective and the results of the children improved (McCutchen and Berninger, 1999; McCutchen, et al., 2002; Moats and Foorman, 2003).

EFL elementary school teachers are expected to lay down a strong foundation in basic decoding and spelling. They will not be able to carry out this extremely important task if they are not taught about English word structure. This was found to be the case in L1 (Spear-Swerling and Brucker, 2003) and has the same importance in EFL. Without this important knowledge it will be impossible to teach novice readers efficiently and to prevent reading failure in the future.

Pedagogical content knowledge

Pedagogical content knowledge (PCK) has been defined in several ways. According to Niess (2005, p.510) it is "*the intersection of knowledge of the subject with knowledge of teaching and learning'* or *'that domain of teachers' knowledge that combines subject matter knowledge and knowledge of pedagogy"* (Lowery, 2002, p.69). An additional definition defines it as "*the product of transforming subject matter into a form that will facilitate student learning"* (de Berg and Greive, 1999, p.20). Pedagogical content knowledge also "… *includes an understanding of what makes the learning of a specific topic easy or difficult*" (Shulman, 1986b, p. 7). It is the key to instruction and results in meaningful learning.

Teaching expertise is based on strong pedagogical content knowledge and an understanding of how students think and eventually learn. PCK, therefore encapsulates the ways of representing and formulating the subject in order to make it comprehensible to others. Grossman (1990) added two additional components to PCK which included

knowledge and beliefs about purposes, and knowledge of curriculum materials which Shulman considered to be different categories of knowledge.

In an interview with Susan Loucks-Horsley (Sparks, 1997) she stresses the importance of pedagogical content knowledge. In her opinion it is understanding which aspects of the content the student is able to learn at a specific stage of development. The teacher must know how to present it to the pupils and be able to lead them through various conceptual understandings. Basic declarative knowledge will not suffice, since the in-service teacher also needs stable procedural knowledge to function efficiently in the classroom. The knowledge of the content only, will not suffice.

Teachers must be able to translate knowledge and beliefs into practice in the classroom and expand their repertoire of instructional approaches used to teach the content. A good understanding of content knowledge leads to improved student learning as well as better quality teaching. Both in-service and pre-service teachers must be provided with strong content and PCK in order to succeed.

2.1.11 Teaching Practices

Change in practices is a significant outcome of the process of '*high quality'* professional development (Supovitz and Turner, 2000). Changes in practices come about when teachers return to their classrooms to retry partially understood ideas and are confronted with problems that need solutions when they deal with diverse student populations (Timperley, 2008). Therefore "*change appears to be promoted by a cyclical process in which teachers have their current assumptions challenged by the demonstration of effective alternative practice, develop new knowledge and skills, make small changes in practice and observe resulting improvements in student outcomes*" (Timperely, 2008, p. 17). This is in agreement with the models described above. When the professional development experienced by teachers is a 'reform activity'(such as a study group or teacher network) more attention is given to how teachers learn (Ball, 1996), and consequently a change in teaching practices can be seen (Hargreaves and Fullan, 1992; Little, 1993; Richardson, 1994; Darling-Hammond, 1995; Darling-Hammond, 1996; Stiles, Loucks-Horsley and Hewson, 1996).

Recent research findings have shown a connection between PD and teaching practices (Cohen and Hill, 1998; Supovitz, Mayer and Kahle, 2000; Supovitz and Turner, 2000). Furhman (2001) found that when PD is connected to content, curriculum and pedagogy, practices will change and the students' achievements will improve. Supovitz (2001) also provides reasons for showing that professional development may change practices but not always student attainment. He says that we tend to look for impact on student learning without allowing enough time to go by. Putnam, Smith, and Cassady (2009) maintain that additional research is needed to find ways to change practices effectively so that policy demands are met.

In their three year longitudinal research, Porter, et al. (2000) showed that teachers changed their classroom practices from one year to the next. The importance of this finding is that positive effects of PD can increase if a systematic and coherent high quality PD programme is provided. Further**,** Ingvarson, Meiers and Beavis (2005) showed that teaching practices changed when they were modelled and then applied in the classroom. Likewise, Desimone, et al. (2002) found that when PD programmes focused on certain teaching practices, teachers used them in the classroom and the feature of 'active learning' promoted their use. Unlike Porter, et al., (2000), Wenglinsky (2002) found that PD influenced teachers' classroom practices very much. Teachers who were taught to teach diverse learners within a PD framework, and were provided hands-on teaching techniques, got better results from the students. Various researchers (Peterson, Fennema, Carpenter and Loef, 1989; Borko, et al., 1997) further claim that teachers need to try out new practices acquired from a variety of settings in their classrooms and reflect on their observations within a collaborative setting so that lasting change will set in. Researchers conclude that changes in practices will come about if teachers are provided with opportunities to try them out and experience good results (Borasi, Fonzi, Smith and Rose, 1999; Lloyd, 2002; Szydlik, Szydlik, and Benson, 2003).

Teachers make decisions all the time about how to teach when they plan and carry out instruction since teaching is a stream of decision making points (Shulman, 1987). The relationship between the acquisition of new knowledge through professional development and its successful application reflects the process of '*teacher as learner'* (Fullan, 1992).

Both teachers' experience and knowledge determine the best course of action needed to be taken. Teachers' autonomy enables them to either adopt or adapt or reject instructional reform as the need arises (Fullan, 1991). In the study carried out on computer teachers, by Dexter, Anderson and Becker (1999) the results showed that the teachers felt they were responsible for making decisions about how to teach in the classroom. They said that their changes in instructional practices were the outcome of thoughtful reasoning, seeing what worked successfully in the classroom. In order to implement new instructional strategies, teachers must get the knowledge and then apply it, bearing in mind the needs of the curriculum, their classroom or existing instructional skills. Teachers choose the approach that works for them (Dexter, Anderson and Becker, 1999).

Changes in teaching practices seem to be connected to change in beliefs yet no cause and effect pattern exists (Guskey, 1986; Grossman, 1992; Kagan, 1992). In the opinion of Kagan (1992) and Thompson (1992) change in beliefs and changes in practices take place in a cyclic fashion and are interconnected. The success of a PD programme can be determined by emphasizing the importance of both elements (Fullan, 2001)

The study carried out by Levin and Wadmany (2005) examined the educational beliefs of teachers, the restructuring process of knowledge and classroom practices within the technology–based classroom. They found that there were different patterns and rates of change in beliefs, knowledge and classroom practices. The study also showed that there was reciprocal relationship between classroom practices and changes brought about to beliefs and knowledge. Significant changes in teaching practices are not necessarily preceded by changes in teaching beliefs. This is in accordance with the opinions of both Guskey (1986, 2002) and Fullan (1993). Although teachers' knowledge and beliefs underpin classroom practices, the actual teaching experience in the classroom affects the shape of the educational beliefs.

In the opinion of Theriot and Tice (2009) the knowledge and beliefs of teachers can change over time as a result of their experience. Stipek, Givvin, Salmon, and MacGyvers (2001) concluded that PD will succeed if an emphasis is placed on both beliefs and practices since they are linked.

In conclusion, change in teaching practices may be the result of PD programmes, but not always. It seems that given duration, coherence, active learning, form of activity, collective participation and focus on content, change in practices will take place, but further research is needed in this area. Furthermore, when teachers try out the new practices, they apply them with adaptations that fit their professional selves and working environments. Change in beliefs has also been found interrelated with change in teaching practices, with the order of influence probably being cyclical.

2.1.12 Student Outcomes

The ultimate goal of professional development is to leave an impact on improved student outcomes (Munoz, Guskey and Aberli, 2009). Holloway (2006) believes that PD that is geared towards student achievement will be meaningful so that instructional decisions will be based on the needs of the students. This way, teachers can ensure their students success. His conclusion is that "*high quality professional development can translate into improved student achievement and overall school effectiveness"* (Holloway, 2006, p.42). Research has shown that PD improves classroom instruction which brings about improved student achievement (Little, 1993; Darling-Hammond and McLaughlin, 1995; National Commission on Teaching and America's Future, 1996; Pearson, 1996; Elmore, 1997; Corcoran, Shields, and Zucker, 1998; Ball and Cohen, 1999; Cohen and Hill, 2000; NRP 2000; Supovitz, 2001; Desimone, et al., 2002). In the opinion of Darling-Hammond (2000) the quality of teacher education and good teaching is the strongest variable related to student outcomes. Student learning will improve when teaching is carried out by skilful and knowledgeable teachers (Darling –Hammond, 2000) since they are the most important means to bringing about student achievement (Putman, Smith and Cassady, 2009).

Guskey (1991, p.73) defines student learning outcomes as comprising "*both cognitive and achievement variables, as well as affective and psychomotor indices of learning. Hence, they might include measures of how well students learn, think, reason and solve complex problems, as well as how they feel about themselves as learners or how they act*

as individuals." Therefore learning outcomes reflect evidence of how effective teaching practices have been (Guskey, 1986, 2002).

The effect of professional development on student achievement exists intuitively and logically, yet it is not easy to prove (Loucks-Horsely and Matsumoto, 1999; Supovitz, 2001; Borko, 2004; Yoon, et al., 2007). When teachers see that innovative pedagogical practices affect their students' learning positively, they are encouraged to take these practices further (Meiers and Ingvarson, 2005), and this will lead to improved student achievement. However, descriptions of the impact of PD on student outcomes are rare (Guskey and Sparks, 2002). There is a limited amount of evidence-based research on the connection between teachers' PD through teacher practices to student achievement (Kennedy, 1998; Supovitz, 2001; Wilson, Floden, and Ferrini-Mundy, 2001; Sykes, 2002; Thompson, 2003; Wayne and Youngs, 2003; Borko, 2004; Clewell, Campbell and Perlman, 2004; Meiers and Ingvarson, 2005; Yoon, et al., 2007). Olsen, Desimone, Le Floch and Birman (2002) explain that no national data in the US has looked at PD over an extended period of time and made a connection between participation in PD programmes and seen changes in teaching practices and student outcomes.

A meta-analysis of nine studies carried out by Yoon, et al. (2007) showed that when teachers participated in a PD course of at least 49 hours their students' achievement was boosted by about 21 percentile points. They concluded that professional development had a moderate effect on student achievement. The results of a recent study carried out by Wallace (2009) revealed that the teaching practices of mathematics and reading teachers who participated in PD programmes were moderately affected, and that the effects on student achievement that had been mediated by practices, brought about small but some significant changes. The results in mathematics were more consistent than in reading. This is supported by the study carried out by Harris and Sass (2007) who found a significant effect on students' mathematics achievement which was not reflected in their reading results. However, Wallace (2009) showed that the reading results in Connecticut reflected improvement which she explained as a direct outcome of student standards being aligned to teacher preparation and professional development programmes during the 1990's (Wilson, Darling – Hammond and Berry, 2001).

In sum, improved student achievement is considered the most important outcome of PD. The process takes place in the classroom once teachers obtain the instructional procedures. The EMPI programme provides a cumulative success orientated approach to teaching students who have experienced failure. Changed teacher practices are expected to bring about better student academic achievement.

2.1.13 Teacher Beliefs

"Teachers hold beliefs about their work, their students, their subject matter and their roles and responsibilities" (Pajares, 1992, p. 314). Teachers make decisions based on their beliefs (Rokeach, 1968, Bandura, 1986; Kagan and Smith, 1988; Ernest, 1989; Lonberger, 1992; Fang, 1996; Richardson, 1996; Stuart and Thurlow, 2000). Therefore, beliefs are a critical component of the understanding of teachers' practices (Luft and Roehrig, 2007). Teachers' decisions leave an impact on the students' learning experience and their actions are influenced by their beliefs, which influence student learning and behaviour (Wiest, Wong and Kreil, 1998). Thus, "*Beliefs appear to be, in essence, factors shaping teachers' decisions about what knowledge is relevant, what teaching routines are appropriate, what goals should be accomplished, and what the important features are of the social context of the classroom"* (Speer, 2005, p. 361). Therefore, teachers' beliefs are the personal constructs that can provide an understanding of a teacher's practice (Nespor, 1987; Pajares, 1992; Richardson, 1996). Research has shown that the beliefs of in-service and pre-service teachers influence their teaching (Ashton and Webb, 1986; Guskey, 1986; Winfield, 1986; Kagan and Smith, 1988; Lonberger, 1992; Fang, 1996; Hashweh, 1996; Richardson, 1996; Solomon, Battistich and Hom, 1996; Kang and Wallace, 2004). These beliefs include beliefs about teacher efficacy, teaching responsibility, pedagogical methods and autonomy or authority, and teachers' decisions leave an impact on students' learning experiences (Dobson Scharlach, 2008).

Some researchers see an interactive connection between beliefs and practices, with practices changing first (Guskey, 1986, 2002) whereas others maintain that beliefs must change prior to practices (Borko and Putnam, 1996; Leder, Pehkonen and Torner, 2002).

The aim of PD is to bring about changes in teaching practices that lead to change in beliefs and attitudes after successful student achievement is observed by the teacher (Guskey, 1986, 2002). Nespor (1987) maintains that teachers are able to change their practices if they have another alternative that they believe will work effectively in their context. PD courses that provide different theoretical frameworks that are classroom focused and school based can bring about these changes. Richardson (1996) found that the opportunities provided by PD left an impact on beliefs of experienced teachers. These opportunities can influence teachers to modify or expand existing beliefs. She also concluded that pre-service experiences were not carried out for long enough to leave a lasting effect. Experienced teachers are less likely to change their beliefs but may change practices if they are in alignment with the professional development programme. Block and Hazelip's (1995) research carried out on teacher education over the years has shown that beliefs are resistant to change and that they function as filters when taking on new perspectives when they are in conflict with those that have been developed (Pajares 1992). Several researchers have found (Wolf, Carey and Mieras, 1996a; Matanzo and Harris, 1999; Fazio, 2000; Stevens, 2002; Theurer, 2002) that instructional as well as situated events can serve as catalysts that bring about changes in beliefs. Therefore, Mistades (2007) suggests that beliefs enable understanding of classroom practices and should be considered in the planning of teacher education programmes, so that thinking skills and practices can be developed.

The research on teachers' beliefs has been underpinned by the premise that a person's behaviour originates in their beliefs (Ajzen and Fishbein, 1980; Pajares, 1992; Cooney, 2001). Therefore, changes in practices must also incorporate changes in beliefs. Beswick (2005) states that there is a complex, subtle and powerful relationship, between teachers' beliefs and their classroom practices. Consequently, the objective of professional learning programmes is to change beliefs and practices in the classroom (Wilson and Cooney, 2002). Studies have shown that mathematics teachers changed their practices when they felt the need to understand their students (Breyfogle and Van Zoest, 1998) and were aware of their need for change (Chapman, 1996). Beswick's (2008) study on mathematics teachers, who were voluntary participants in a PD course, showed that they were willing to change and that they were motivated to improve their students learning.

In another study, carried out by Levin and Wadmany (2005) on teachers' educational beliefs and classroom practices in a rich technology based classroom, changes were noted in teacher educational beliefs, knowledge restructuring processes and their practices. Significant changes came about in classroom practices before the conceptualization of consolidated educational beliefs. This supports the opinion of Guskey (2002) and Fullan (1993) who say that change in teachers' practices will occur prior to change in beliefs. Their findings provide support for the theory that educational beliefs change gradually (Gunstone, 1994). In this case teachers faced different problems arising from their technology based environment. In order to solve them they took decisions which affected their practical knowledge and later stimulated changes in their beliefs. Change in practices prior to change in beliefs also indicates a reciprocal link instead of a unidirectional one between classroom practices, change in beliefs and the restructuring process of teachers' knowledge and contribute to how teachers think and change (Levin and Wadmany, 2005). Similar results were found in studies of teaching struggling readers. Teachers' beliefs about teaching were found to influence their teaching behaviours (Winfield, 1986; Soodak and Podell, 1994; Maxon, 1996). Their beliefs were also found to influence the feeling of responsibility that they had for their at risk students (Winfield, 1986; Soodak and Podell, 1994).

In sum, research has shown that beliefs have a direct influence on teaching practices in the classroom. They determine how teachers teach and the relevance of teaching behaviours. Changes in beliefs become permanent when teachers register improved student attainment. There seems to be a reciprocal link between beliefs and practices, and the change should be in alignment with PD.

2.1.14 Teacher Commitment

Although commitment does not appear in any of the models of PD it was found to be significant in my research and a description is included here.

Commitment is the word used by teachers to differentiate between those who are '*caring and dedicated'* and '*take their job seriously'* and others who '*put their own interests' first'* (Elliot and Crosswell, 2002). The success and future of education is dependent on

teacher commitment and engagement (Huberman, 1995; Nias, 1981) and those who are committed can make a difference (Firestone and Rosenblum, 1988).

Teachers' commitment has been defined as the degree of psychological attachment teachers have towards their profession (Chapman, 1982). Teachers use this term to describe themselves and each other (Nias, 1981, 1989) and it is part of their professional development (Elliott and Crosswell, 2001; Crosswell, 2006). "*Commitment comes when one experiences responsibility for the outcomes of one's work*" (Firestone and Pennell, 1993, p. 498). Therefore, teacher commitment to students is their devotion to and the responsibility they take for their students' learning and behaviour (Park, 2005; Sammons, et al., 2007). When positive, it contributes to work performance, promotes students' achievements, and raises the standard of education through effective teaching (Graham, 1996; Louis, 1998). Committed teachers invest in their profession (Day, 2000) and there is a connection between their personal and professional worth (Woods, et al., 1997). They are likely to show willingness to learn.

There are three different aspects associated with commitment and teachers' commitment (Firestone and Pennell, 1993).

1. Organizational commitment – where one accepts and believes in the goals and values of the organization one works for as well as the desire to make an effort on behalf of the organization and the feeling that one wants to stay there (Mowday, Steers and Porter, 1979; Mowday, Steers and Porter, 1982).

2. Professional commitment which is one's positive attachment to work. As commitment is related with work satisfaction (Firestone and Rosenblum, 1988) in the teaching profession satisfaction is felt when students succeed and /or parents praise teachers.

3. Commitment to student learning is reflected in a teacher's dedication to help students succeed irrespective of their social or academic background. It is seen in students' learning engagement and the academic success of students who are at risk (Kushman, 1992). A mixture of commitment to the organization, profession and the students

provides motivation to bring about changes in practices and to cope with the demands that those changes bring about (Firestone and Pennell, 1993).

Following is a review of the main issues composing professional commitment and commitment to students and student learning. The aspect of organizational commitment is important yet it is beyond the boundaries of the current research. The issue of organizational commitment was not dealt with in this research, since the participants were motivated to join the programme entirely on their intuitive, individual needs to improve their personal teaching so that they could solve difficulties within the framework of the class. No organizational goals or beliefs were defined and not one teacher expressed their affinity to the workplace or their desire to remain there as the motivation behind their need to improve their teaching and solve burning issues in the classroom. The school did not provide PD and no peer support was given. The course was not carried out during the regular school day and there was no mentoring or coaching. That is, the teachers' motivation to join the course was not based on organizational commitment, but rather, on professional commitment and their commitment to student learning.

Professional commitment: Research has shown that teacher commitment is a predictor of the teacher's performance on the job as well as of the quality of education (Tsui and Chang, 1999). Teachers' knowledge, as well as student achievement, influence and contribute to teacher commitment (Firestone and Rosenblum, 1988; Firestone and Pennell, 1993). Teacher commitment, in turn, is considered to be an important factor in the improvement of school outcomes, particularly student academic success (Kushman, 1992).

Learning opportunities enable teachers to expand their knowledge, which will contribute to commitment. Consequently classroom effectiveness will improve, because teachers have increased their knowledge of subject content and their teaching practices, and the feedback received from students will provide a sense of competence (Firestone and Pennell, 1993). "*Learning opportunities can significantly influence teacher commitment*" (Firestone and Pennell, 1993, p. 507). Rosenholtz (1989) found that learning

opportunities predicted commitment. Teachers tend to become more committed to their work when they use practices that leave them with a feeling of effectiveness and competence (Maeroff, 1988; Lichtenstein, McLaughlin, and Knudsen, 1991).

Commitment to students and student learning: Commitment is expressed by teachers who are motivated, have the inclination to learn and believe that they can make a difference and improve the academic achievements of their pupils. The success of their pupils is an important factor related to their commitment. The commitment of teachers who work with disadvantaged or struggling students is more persistently challenged (Day, et al., 2007).

Firestone and Pennell (1993), as mentioned above, claim that in order to enhance the teacher's professionalism and bring about changes in practices teachers must show commitment towards the organization they work in, their profession and the students. The teaching profession is unique since there is a working relationship with both the school and the students (Elliot and Crosswell, 2002). If teachers are committed to their teaching profession they are concerned with student achievement (Firestone and Rosenblum, 1988). Teachers' commitment to their students incorporates their desire to help them and to adopt responsibility for both their learning and life at school. It includes the devotion teachers have for the behaviour and learning of their students (Nias, 1981; Dannetta, 2002; Elliot and Crosswell, 2002). PD can contribute to teachers' commitment because they are given learning opportunities (Park, 2005). When teachers do not learn and grow professionally they may have low self efficacy which may consequently lower their commitment (Joffres and Haughey, 2001).

There are not many studies that look at the connection between teacher commitment and the academic achievement of students, because it is difficult to assess the effect of teacher commitment on student achievement in a direct way (Park, 2005). The findings that exist reflect a partial and inconclusive picture (Firestone and Rosenblum, 1988; Rosenholtz, 1989; Kushman, 1992). Committed teachers were found to attain expected or even improved results from their pupils (Day, et al., 2007, VITAE project, 2001-2005). Further, Dannetta (2002) found that watching a student learn is a motivational factor.

This result is supported by previous studies (Bredson, et al., 1983; Rosenholtz, 1987; Rosenholtz, 1989; Rosenholtz and Simpson, 1990; Kushman, 1992; Raudenbush, et al., 1992).

Rosenholtz (1989) found that autonomy was an integral part of creating commitment to student learning. Autonomy is central to internal motivation (Deci and Ryan, 1985), and thus, if one takes responsibility for success the result is motivation that enables the continuation of successful practices. Autonomy enables teachers to attribute success to themselves (Firestone and Pennell, 1993) and thereby commitment is created.

Dannetta (2002) found congruency between the effort put in by both teacher and student. Teachers' efforts wane quicker when teaching weaker students since it is harder to activate them. Non- academic students have a negative effect on teachers' commitment to student learning. This result is in contradiction to Kushman (1992) who claimed that student learning has a weak connection with teachers' expectations of students' success.

In sum, committed teachers can make a difference to the academic achievements and the personal lives of their students. Their commitment to their organizations, their profession and their students' academic outcomes, is often intertwined. Successful student achievement strengthens teacher commitment to their students and professional commitment brings about PD.

2.1.15 Summary

PD for teachers improves the standard of education. It is a process that deepens their knowledge and enables them to acquire the teaching practices that will bring about improved academic achievement of the students. Their beliefs will change once this is established. Three models describe the process of PD. Guskey (1986, 2002) described the order of change where practices change prior to beliefs. Ingvarson, Meiers and Beavis (2005) examined the effects of structural and process features on knowledge, practices and efficacy. Garet, et al., (2008) showed that the six key features of promising PD (three structural and three core features) improve teachers' knowledge and change practices. Knowledge is the basis for good teaching. Practices are an important outcome of PD and

must have practical application in the classroom. The ultimate outcome of PD is improved academic achievement of the students and results from good classroom teaching. Beliefs are an integral component of how teachers understand their practices and shape the decisions they make about their teaching. Self efficacy reflects how teachers feel about their ability to bring about good student achievement. Commitment is the positive feelings that teachers have towards their profession and the responsibility they have for their students' learning. All components are part of the process PD, and are integrated into effective classroom teaching.

2.2 Literacy Acquisition – Knowledge and Practices of Professional Development

This section deals with literacy acquisition. It is central to this research because the EMPI programme is based on knowledge and practices necessary for teachers to provide basics of beginning reading. Furthermore, the teachers' fundamental knowledge of phonics was evaluated in the research and thus a clarification of its components is in order. In other words, to fully understand the process of the teachers' PD there was a need to explain its content areas.

This section is presented in the following order. Reading is defined and an explanation of the importance of word recognition is described. The different components of reading instructions are elaborated: phonological awareness and alphabetic knowledge, phonemic awareness, phonics, and spelling. The section continues with two basic theories of reading acquisition, theories that are part of the conceptual framework of the research. (For definitions of concepts related to beginning reading, see appendix 4).

2.2.1 Introduction

The ability to read is an important educational goal since it enables learning and the acquisition of knowledge. Failure to read may lead to lack of success in school and life (Moats, 1999)since social and economic success have been linked to reading achievement (Blaunstein and Lyon, 2006). However, teaching reading is a complex task because not all students master the skill easily (Moats, 2000; Bursuck and Damar, 2007; Gallant and Schwartz, 2010). Success in early acquisition assures the development of a rewarding

reading experience as first grade reading ability was found to be an indicator of 11th grade outcomes (Cunningham and Stanovich, 1997). Therefore, most children need guided instruction at the initial stages (Stanovich, 1986) otherwise their ability to learn how to read is inhibited resulting in deficient decoding skills and lack of reading practice. On the other hand, the good reader becomes proficient and word recognition improves so that reading becomes a pleasurable experience. Struggling readers fall behind proficient readers which creates a gap that increases with time. This is known as Matthew Effects (Stanovich, 1986). Therefore, in order for readers to make sense of written language, they need to develop word recognition skills based on knowledge of the alphabetic system and phonemic awareness (Ehri, 2005). These concepts are taught in the EMPI programme for EFL teachers of children with reading difficulties. Reading difficulties exist in several groups of children: children with dyslexic characteristics (for a definition of dyslexia see appendix 1), growing up in low socioeconomic status, and children who were taught to read English inefficiently (false starters or non- readers).

The EMPI programme trains teachers to teach children with reading difficulties, children who belong to these three sub-groups. As the main focus of the research is the PD process of the teachers, the literature review focuses on four areas which include PD, literacy acquisition, EFL and Intervention. Dyslexia and low socioeconomic status are only sub categories of the literature review since they are neither the focus nor part of the issues investigated.

2.2.2 Definition of Reading

Reading is defined as getting meaning from print (Rayner, et al., 2001). It is a complicated activity that includes both perception and thought. In essence reading incorporates two basic processes (Gough and Tumner, 1986; Hoover and Gough, 1990). The first is learning how to decipher print (decoding) and the other comprehending what the print means (comprehension). A skilled reader will carry out decoding or instant word recognition swiftly and accurately (Moats, 2005). Strong word recognition skills are the basis of accurate and fluent reading for meaning (Share and Stanovich, 1995; Adams, Treiman and Pressley, 1997; Rayner, et al., 2001). Word recognition is dependent on

phonological awareness (speech sounds in words) and orthographic processing, or the exact letter sequence in a word (Ehri, 1998). Synthetic phonics enables readers to overcome difficulties with word recognition so that they can concentrate on comprehension (Johnston and Watson, 2009).

Share (1995) proposed that when children have enough phonic knowledge they are able to work out the pronunciation of unfamiliar words and they apply a self teaching mechanism which enables the newly decoded words to become part of their "sight vocabulary" for future use. The ability to analyse the phonemic structure of words and to make links between grapheme and phonemes will facilitate the sight word recognition and establish them in memory (Ehri, 1992, 1998; Rack, Hulme, Snowling and Wightman, 1994; Stuart, Masterson and Dixon, 2000).

2.2.3 Word Recognition

Word recognition is the ability to identify words automatically (Ashby and Rayner, 2006). According to the simple view of reading (Gough and Tumner, 1986; Hoover and Gough, 1990) decoding is *"a proxy for word recognition"* (Center, 2005, p.75). Studies carried out on eye movements (Rayner and Pollatsek, 1989) show that they reflect difficulties readers have in encoding words. Phonological codes are activated by skilled readers early in eye fixations (Pollatsek, Lesch, Morris and Rayner, 1992; Rayner, Sereno, Lesch and Pollatsek, 1995) Acquisition of the reading skill requires the building up of a large storage of sight words in memory (Ehri and Roberts, 2006). Nation and Snowling (2004) make a distinction between decoding and word recognition. In order to read accurately and efficiently students need to be able to do more than decode the pronunciations based on spelling–sound mappings as seen in the reading of nonsense words. They need knowledge of the *"the quasi–regular nature of the English orthography"* (Nation and Snowling, 2004, p. 343). If reading means gaining meaning from print, and words represent the basic units of meaning, it is necessary to read words quickly and correctly in order to become a skilled reader (Ashby and Rayner, 2006). The consolidation of word recognition is an essential skill for the reader. It is the foundation

on which reading is based and "*all the other processes are dependent on it*" (Snowling and Hulme, 2005, p.3).

The child must learn that graphemes are attached to phonemes which establish sight words in memory (Ehri, 1998). If s/he is able to carry out an analysis of the phonemic structure of a word and make the linkages between the phoneme to the grapheme, acquisition of 'sight words' will be facilitated. This has been suggested in the work of Ehri (1992, 2005), Rack, Hulme, Snowling and Wightman (1994), and Stuart, Masterson and Dixon (2000). The ultimate aim of sight word acquisition is the automatic stage of word recognition, thus enabling the reader to invest energy in the meaning of the print (Ehri and McCormick, 1998). The ability to be able to read words accurately, in isolation, as well as within the framework of a text, is considered to be the hallmark of a skilled reader (Stanovich, 1980). Lack of good word recognition will impede comprehension and use of written language. In the EMPI programme teachers are taught synthetic phonics. They consolidate knowledge of phonological awareness and orthographic awareness, which underlies the content knowledge they require for the practices needed to teach beginning reading.

2.2.4 Components of Reading Instruction

The concepts used in the description of reading instruction are based on the findings and conclusions published in *Teaching Children to Read: An evidence-based assessment of the Scientific Literature on Reading and its implications for reading instruction – reports for subgroups* (NRP- The National Reading Panel, 2000). Many of the recommendations of the NRP were turned into teaching strategies and published in a booklet developed by the Center for the Improvement or Early Reading Achievement, and financed by the National Institute for Literacy (NIFL, 2001). Based on these findings, reading is the result of the interaction between decoding and comprehension. The domain of decoding includes phonemic awareness, phonics instruction and fluency. The other domain of comprehension includes vocabulary acquisition and linguistic knowledge as well as text interaction for meaning (Sousa, 2005). Success in learning to read will be assured if teachers provide instruction in the five different areas. Word recognition must be accurate

and automatic. In addition, spelling must not be overlooked since there is mutual facilitation and reciprocation between the spelling and reading (Moats, 2005/6).

In the following section, the following components of reading instruction are described. They include: phonological awareness, instruction of alphabetic knowledge, phonemic awareness, phonics, and spelling.

2.2.5 Phonological Awareness and Alphabetic Knowledge Instruction

Phonological awareness can be defined as sensitivity for sound structure of speech, rather than the meaning (Foorman, Francis, Schatschneider and Mehta, 1998). Research has shown that there is a connection between phonological awareness and success in learning how to read (Bradley and Bryant, 1978, 1983; Adams, 1990; Stanovich, 1991; Snowling, 1991; Nation and Snowling, 2004). Early phonological training can develop phonemic awareness (Bradley and Bryant, 1983; Ehri, 1998). English is an irregular language but even before children learn to read they are aware of *onset* and *rime* which are speech units (Goswami and Bryant, 1990; Goswami, 1993). This enables them to categorize words which they recognize in reading and also helps with the spelling. When phonological awareness develops, the child's sensitivity to phonemes is increased and they apply this knowledge in their reading when they make analogies that are based on grapheme phoneme correspondences (Goswami, 1993). Muter, Hulme, Snowling and Taylor (1998) found that two independent factors segmentation and rhyme accounted for performance on phonological awareness tasks in 4 and 6 year old children. Early segmentation ability predicted the reading outcome at 6 and contributed to spelling development at age 9 (Muter and Snowling, 1998a, 1998b.).

Studies in other languages back up the reciprocal connection between phonological awareness and learning to read (Lundberg, Olofsson and Wall, 1980; Wagner and Torgensen, 1987; Ball and Blachman, 1988; Tumner, Herriman and Nesdale, 1988). Phonological awareness is also a prerequisite for children learning English as L2 (second language) or as a foreign language (FL) (Goswami and Mead, 1992) and can be taught, thereby improving reading acquisition (Bradley and Bryant, 1983; Treiman and Baron, 1983; Perfetti, Beck, Bell and Hughes, 1987; Ball and Blachman, 1988; Lundberg, Frost

and Peterson, 1988; Byrne and Fielding–Barnsley, 1991; Mann, 1991;Stanovich, 1991;Vellutino and Scanlon, 1991). Reading programmes that incorporate training in phonological awareness have been successful in the teaching of reading in the classroom (Blachman, 1989; Wise, Ring and Olson, 1999). In addition, it has been shown that children who have not learned to read can overcome problems when they acquire phonological training (Blachman, 1989; Olson, Wise, Ring and Johnson, 1997). In the study carried out by Kang (2009) phonological awareness proved to be a stronger predictor of reading competence in EFL elementary students than their oral skills. Phonological awareness provided in Korean (L1) and English (EFL) promoted reading development in English (Han and Cha, 2007). This study highlighted the importance of metalinguistic awareness in L1 for the literacy development in L2 and the necessity to provide phonological awareness instruction to develop decoding skills in English that will eventually lead to efficient comprehension (Kang, 2009)

Knowledge of the alphabet at school entry is one of the single best predictors of eventual reading achievement (Stevenson and Newman, 1986; Adams, 1990; Rayner, et al., 2001). Therefore, the ability to grasp the alphabetic principle is a major challenge for children. The learning of letter names should be taught explicitly (Chall, 1967; Adams, 1990; Snow, Burns and Griffin, 1998; NRP 2000) and enables children to learn the sounds in the names with ease (Ehri, 1980, 1983, 1991; Share, 2004a; Ehri and Roberts, 2006) so they can be taught together. The names of the letters are only the beginning as there are additional sounds to be learned which are not found in the names. Hulme, Snowling, Caravalos, Carroll (2005) believe that phonemic awareness must be taught together with letter knowledge and links between letters and phonemes in the context of printed words (Hatcher, Hulme, and Ellis, 1994; Ehri, et al., 2001; Hatcher, Hulme and Snowling, 2004). This will bring about efficient word recognition and the child will read.

In Bowey's review on predictors of reading skills (2005) she emphasizes the importance of both letter knowledge and phonological sensitivity. She is in agreement with Byrne (2005) who also believes that these two areas co-determine the development of early reading. Results of research (Share, Jorm, MacClean and Matthews, 1984) showed that reading success at the end of Grade 2 is directly and strongly dependent on the inside-out

(phonemic awareness and letter knowledge) skills that children bring to the task of reading from the preschool to and kindergarten period. Children who fall behind from the outset are not likely to close the gap.

Snowling (2004) found that phonemic awareness and letter knowledge were predictors of word recognition. Children that enter school knowing the letters of the alphabet, as well as having the ability to segment the spoken words into speech sounds, cope better with learning to read.In the opinion of Windfuhr and Snowling (2001), the predicative relationship between letter knowledge and reading is possibly an example of the general relationship between learning to read and phonological learning ability.

Although letter recognition and phonemic awareness are considered vital for reading in an alphabetic orthography (Share and Stanovich, 1995; Snow, Burns and Griffin, 1998), these areas were neglected in Israel. From the outset the novice readers were not provided with the basic knowledge needed to promote their reading skills. Yet, in any remedial course alphabetic knowledge is always taught (Augur and Briggs, 1992). A letter has both a name and a sound and is always given a word for association. Teachers are trained to do this in the EMPI programme.

2.2.6 Phonemic Awareness

Phonemic awareness is a key predictor of the success rate of pre- school children and grade one students learning how to read (Share, Jorm, Maclean and Mathews, 1984). It has been defined as "*the ability to focus on and manipulate phonemes in spoken words"* (Ehri, 2002 p. 111), or "*the conscious awareness that words are made up of segments of our own speech that are represented with letters in an alphabetic orthography"* (Moats, 2005, p. 93). Walsh (2009) considers it to be a prerequisite to the development of both the alphabetic and phonemic skills. Furthermore, children who have received instruction in phonemic awareness succeed when they learn how to read (Bus and van Ijzendoorn 1999; Ehri, et al., 2001; NRP 2000). Yet, only a minority of children acquires phonemic awareness easily. Ehri, (1979, p. 63) wrote:"*If the light were not so gradual in dawning, the relationship between speech and print might count as one of the most remarkable discoveries of childhood."*

There is a connection between a child's phonemic skills and the progress he or she shows when beginning to learn how to read (Hulme, Snowling, Caravalos and Carroll, 2005). The study carried out by Lundberg, Frost and Petersen (1988) showed that when young children are taught phonemic awareness before formal reading instruction commences, their success in reading and spelling is boosted. Byrne and Fielding-Barnsley (1991) showed that phonemic awareness aided word recognition skills. These findings have been replicated in studies in other languages such as Finnish (Korkman and Pletomaa, 1993), Hebrew (Kozminsky and Kozminsky, 1995) and German (Schneider, et al., 1997).

The learning of letters is an effective means for the acquisition of phonemic awareness (Johnston, Anderson, and Holligan, 1996; Macmillan, 2002). The study carried out by Geva and Siegel (2000) showed that instruction in letter names and letter sounds enable word reading just as effectively for children learning English as a second language as for L1 learners. Therefore, letter names and phonemic awareness are basic necessities needed for reading in English in both L1 and L2. Instruction in both phonemic awareness and letter sound correspondences has a greater effect on word reading than phonemic awareness on its own (Bradley and Bryant, 1983; Ehri, et al., 2001).

2.2.7 Phonics

Phonics is *"an instructional approach to developing word identification proficiency"* (Snow, Griffin and Burns, 2005, p. 78). Phonics instruction teaches the alphabetic principle (predictable and systematic relationships between written letters and spoken sounds) and enables the child to make grapheme phoneme correspondences, thereby providing them with an analytical tool to decode unknown words that have to be read at the beginning of a reading programme. This is basis for reading unfamiliar words and is a necessary part of the word recognition system (Marsh, Friedman, Welsh and Desberg, 1981; Frith, 1985; Perfetti, 1985; Feitelson, 1988; Seymour, 1997; Ehri, 1998). The orthography of the English language is complex and it is necessary to devote between two to three years of phonics instruction in the classroom (NRP 2000). Teachers need to consolidate this knowledge so that they understand how to teach phonics well (Moats, 2005).

Research over the past twenty years has shown that some phonics instruction is necessary in order to develop good word identification skills (Perfetti, 1985, Feitelson, 1988, Adams, 1990, Chall, 1997, Snow, Burns and Griffin, 1998; NRP 2000). Ehri, et al. (2001) found that systematic phonics successfully boosts sight word reading, decoding and reading comprehension. The application of phonics to the decoding of unknown words helps the novice reader to decode unfamiliar words, to internalize spelling patterns and eventually become a fluent reader (Mesmer and Griffith, 2005). The ability to decode is beneficial to sight word reading at the full alphabetic phase (Ehri, 2005). In order to gain meaning from print the reader must master the alphabetic system and consolidate basic grapheme- phoneme correspondences. When children are taught to detect the patterns of sounds in words and connect them with letter patterns they develop insights into spelling (Medwell, et al., 2004).

The British Independent Review of the Teaching of Early Reading (Rose, 2006), as well as the National Reading Panel (2000) in the USA, recommend the teaching of systematic synthetic phonics as the best approach to teaching decoding (reading) together with spelling (encoding). This is in opposition to the whole language approach recommended by Goodman (1965, 1967, 1970, 1976, 1986, 1992) and Smith (1971, 1973, 1978). Johnston and Watson (2009) explain that synthetic phonics teaches a small cluster of sounds initially so that the child learns to sound out and blend them. Letters are taught one at a time always incorporating previously taught sounds until all the sounds in English have been taught. The ability to match graphemes to phonemes and then to blend phonemes into words has to be consolidated by the novice reader. A child's ability to analyse the phonemic structure of words and to connect phonemes to graphemes brings about the enhancement of a reader's sight word vocabulary (Ehri, 1992; Rack, Hulme, Snowling and Wightman, 1994; Stuart, Masterson and Dixon, 2000). Uribe (2009) criticizes the emphasis on phonics instruction, and does not consider phonics to be an "*essential element in the reading process*" (p.11). In his opinion phonics can be applied as a tool to understand a text in specific situations but it is the actual event of reading which takes place between the reader and the book that counts. He bases his argument on the opinions of others such as Krashen (2003) who considers phonics to be a source of boredom leading to student frustration and discipline problems, Ward (2008) who

believes that phonics has no impact in later grades, Goodman (1986) who believes that phonics is used only in school and overlooks the connection between learning and reading and that students trained in phonics are good at word reading but lack comprehension skills (Garan, 2002). Hammil and Swanson (2006) provide a different interpretation to the results of the NRP (2000) promoting the superiority of phonics instruction. They argue that phonics is limited to teaching decoding skills, does not hold up over time and does not teach comprehension. However, they suggest that at risk readers who are taught to decode in a tutorial setting benefited slightly more from phonics than a non phonics approach. On the other hand, a study carried out on systematic phonics instruction using a computer programme on Dutch kindergarten children, showed improvement in phonemic awareness, reading and spelling (de Graaf, Hasselman, Verhoeven and Bosman, 2009) when compared with a non systematic phonics approach. Furthermore, an action research project carried out by Edwards (2008) showed that even struggling high school students benefited from a structured phonics intervention programme and their fluency improved. Both Chall (1967) and Adams (1990) recommended the use of phonics for the teaching of beginning reading without overlooking the importance of reading for meaning once decoding was in place.

Research has been carried out that supports the teaching of phonics (Chall, 1967,1983,1996,1997; Adams, 1990, 2003; Johnston and Watson, 1997; Foorman, et al., 1998; Moats, 2000 Ehri, 2004) and has refuted some of the basic beliefs that underlie the whole language approach. Reading is not a guessing game and learning to read is not a natural process but has to be learned (Gough and Hillinger, 1980; Liberman, 1999).

Phonics is especially important as the medium of instruction of beginning reading in EFL. Eskey (1992) explained that the understanding of language and vocabulary is a major problem in FL reading, and therefore even the educated guessing of a word in context is no substitute for accurate decoding. He encouraged the use of phonics as the method of reading instruction in EFL (Eskey, 1992).

Phonics provides the knowledge to accurately predict the correspondences between phonemes and graphemes. It enables the reader to decode new words and to accurately

recognize familiar words and spell them. An explicit approach enables children to learn how to read and spell (NRP 2000; Independent Review of the Teaching of Early Reading, Final Report, 2006). The teacher plays a dominant role and makes it clear to the student what has to be taught (Minskoff, 2005). Further, children who are at risk for reading difficulties benefit from a systematic phonics approach (Hatcher, Hulme and Snowling, 2004). It can be seen from the literature that the phonics approach uses practices based on the teachers' understanding of phonological and phonemic awareness which is the basis of the knowledge acquired in the PD process.

2.2.8 Spelling

Teachers need knowledge about the teaching of reading and spelling in order to prevent reading failure (Snow, Burns and Griffin, 1998). There is mounting evidence that beginning readers benefit when they are given the opportunity to learn about language and other text elements that make up words (Adams, 1990, Ehri, 1991; Share and Stanovich, 1995; Snow, Burns, and Griffin, 1998; NRP 2000). In order to carry out this task teachers must have the knowledge to break the code (NRP 2000; McCardle and Chhabra, 2004). Research has shown that teachers lack the necessary linguistic knowledge and skills needed for systematic, language focused reading instruction (Moats, 1994; Moats and Lyon, 1996; Bos et al., 2001). Yet, once teachers learn about the role of orthographic and phonological information in literacy instruction, they change their classroom practices and student attainment improves (McCutchen and Berninger, 1999; McCutchen et al., 2002; Moats and Foorman, 2003; Spear-Swerling and Brucker, 2004). Spelling has also been neglected. Johnston (2001) found that teachers were not satisfied with their students spelling outcomes, but they lacked the necessary knowledge to improve their instruction. Therefore, teachers should receive intensive instruction in these areas, given by knowledgeable teacher educators, who integrate this knowledge into pre-service or in-service training programmes (Joshi, et al., 2009).

"*Spelling is a psychological, linguistic and conceptual process involving knowledge of the alphabet, syllables, word meaning, and the history of words.*" (Templeton and Morris, 2000 cited by Joshi, et al., 2008-9) and it is "*an amalgamation of phonological,*

morphological and orthographic knowledge" (Joshi and Carreker, 2009, p.114). It is a productive language process because sounds are heard which have to be translated into written alphabetic symbols or through spoken letter names (Henry, 2003). Spelling reflects a person's knowledge of words and learning about words which improves spelling skills (Joshi, Treiman, Carreker and Moats, 2008-9).

Spelling is a critical component of literacy yet it is a skill that has been neglected by teachers (Joshi and Carreker, 2009). Moats (2005), explains that when a child learns how to spell it enhances both reading and writing. Furthermore, "*...spelling instruction underpins reading success by creating an awareness of the sounds that make up words and the letters that spell those sounds*" (Joshi, Treiman, Carreker and Moats, 2008-9 p.6). The ability to learn how to read and spell has the same basis of knowledge (Ehri, 2000). Ehri and Snowling (2004) found that in order to read words 'by sight' the reader must have the ability to map either letters or letter combinations to sounds, and to spell, s/he must receive instruction and incorporate information about print, speech sounds and meaning, which provide support for memory of whole words used for both spelling and sight reading. Limited spelling ability hinders the ability of written expression (Singer and Bashir, 2004) but knowledge of spelling promotes accessibility to reading (Snow, Griffin and Burns, 2005).

Studies have shown that spelling contributes to reading acquisition (Morris and Perney, 1984; Ehri and Wilce, 1987; Cataldo and Ellis, 1988). Furthermore, there is a correlation between spelling and measures of word recognition and decoding (Ehri, 2000) and it is a consistent predictor of reading achievement (Ellis and Cataldo, 1992). Additional spelling instruction given in intervention studies has shown an improvement in reading tasks (Berninger, et al., 1998; Graham, Harris and Chorzempa 2002, McCandliss, Beck, Sandak and Perfetti, 2003).

In sum, phonological awareness, alphabetic knowledge, phonemic awareness, phonics, and spelling should be incorporated in the teaching of the essentials of beginning reading. Spelling should be taught systematically and explicitly from phonemic awareness to the understanding of words of foreign origin.

2.2.9 Theoretical Basis of Reading Process

Teachers need in depth understanding of the process of reading acquisition. Two main theories describe the interaction of the different processors used in the reading process, as well as the different phases readers pass through and the implications for teaching at each point. Teachers must internalize the understanding of these two theories in their PD process in order to apply the required knowledge and use suitable practices.

Two main theories form the basis of this thesis in the area of reading. The first is the Parallel Distributed Processing Schematic of Reading or PDP (Adams, 1990, 2003), focusing on the coordination of multiple brain systems. Well designed reading instruction will educate all of the systems and includes not only phonological and orthographic processing but semantic processing as well. This theory sets the basic structure for reading instruction. The second theory is the Phase Theory of Sight Word Reading (Ehri, 1991, 1994, 1995, 1998, 1999, 2002, 2005) that depicts the phases of reading acquisition. It fits into the structure that has been set by Adams (1990, 2003) and shows how sight word reading develops and changes over time. Each phase is described in detail. In both theories, the aim of learning to read is to enable a skilled reader to instantly recognize words and comprehend the content of the text. These theories provide an explanation of how this process takes place.

<u>Parallel Distributed Processing Schematic of Reading- PDP (Adams, 1990, 2003)</u>

The Parallel Distributed Processing theory (PDP) assumes that reading is an interactive process and all the levels of processing mutually coordinate with each other. The skilled reader, reading for meaning, fixates their eyes on a word, in a fraction of a second they process the spelling of the word visually, and register pronunciation and meaning in context (Adams, 1990, 2003; Just and Carpenter, 1987; Rayner and Pollatsek, 1989; Rayner, 1997).

In order to explain the speed of word recognition, the connectionist or parallel distribution processing framework was developed as a computer simulation of the process of reading (Seidenberg and McClelland, 1989; Van Orden, Pennington and

Stone, 1990; Plaut, McClelland, Seidenberg, and Patterson, 1996). The model shows the use of multiple brain systems which are coordinated with one another and bring about efficient reading. Effective reading instruction will use all of the processors and develop the functions needed. These include recognition and fast processing of sounds, letter patterns, morphemes, word meanings, phrases sentences and longer passages. Four processors are active and there is interaction between context, meaning, orthography and phonology (Adams, 1990; Rayner, et al., 2001, 2002). Glaser (2005) describes the functioning of the processors in the following way. The phonological processor is able to detect, store and retrieve phonemes and sound sequences in spoken language and it enables us to remember, perceive and produce speech sounds in language. The orthographic processor sees and recognizes letters, punctuation marks, words and spaces. It stores information necessary for word recognition and spelling. The semantic (meaning) processor stores the meanings of known words constructs the meaning of new words as they are read and allows comprehension. The context processor influences the semantic processor but has a limited role in word recognition and pronunciation. A mere glance at a word will enable the skilled reader to read and understand a word if the pronunciation, spelling and meaning are interconnected in memory.

Current theories of the development of word reading place an emphasis on both the simultaneous and reciprocal growth of skills in all the major processing systems (Share and Stanovich, 1995; Ehri, 1996; Rayner, et al., 2001; Adams, 2003). Moats (2005) calls this model the ‘four-part processing model’ and suggests that the skilled reader will process sounds, letters and word meanings, together with the context in which a word appears. This will be carried out quickly, efficiently and accurately by the skilled reader. Teachers of reading must make sure that they teach their students to integrate all these processes systematically and efficiently (Moats, 2005).

In sum, skillful word reading is dependent on the coordination and interaction of multiple neurological systems. They include the orthographic, phonological, semantic and the context processors. Difficulty in any one of these processors will result in poor reading. Efficient beginning reading instruction should make sure that all the processors are activated.

Phase Theory of Sight Word Reading (Ehri, 1991, 1994, 1995, 1998, 1999, 2002, 2005)

The Phase Theory of Sight Word Reading has been proposed to depict the different phases the student goes through on the road to reading acquisition (Soderbergh, 1977; Gough and Hillinger, 1980; Mason, 1980; Chall, 1983; Juel, 1983, 1991; Ehri and Wilce, 1985,1987a; Frith, 1985; Goswami, 1986, 1988; Juel, Griffith and Gough, 1986; Ehri, 1987,1991,1994; Stuart and Colheart, 1988). This theory serves as the underlying basis for the teaching of beginning reading, as well as providing implication for instruction for LD or delayed reader. Ehri (2005) studied the developmental pathway of reading and explained how words in print are stored in memory at a particular moment. The phases are emulated in the instruction of the EMPI programme.

Ehri (1998, 2005) describes the word reading process and provides instructional suggestions for at risk readers as well as readers with dyslexic characteristics with processing deficits. Her research has shown that a reader, who knows a word by sight, is capable of recognizing it automatically and will carry out word reading unconsciously. This is the most efficient way to read words within a text since the comprehension process will not be interrupted. Therefore sight word reading is necessary for text reading. Ehri's (1998, 2005) Phase model of reading will be described in detail further on.

As mentioned above, Ehri's research (1992, 1998, 2005) has shown that sight words are learned when readers make a connection between the letters in spelling and the sounds in pronunciation. This is based on knowledge of the alphabetic system which includes phonemic awareness and grapheme phoneme connections, as well as recurring spelling patterns. Therefore, "*when a reader learns a sight word they look at the spelling, they pronounce the word, they distinguish separate phonemes in the pronunciation, and they recognize how the graphemes match up to the phonemes in the word. Reading the word several times secures its connection in memory*" (Ehri, 2005, p. 170).

The most efficient way to read words automatically is to access them in memory and is known as sight word reading. We look at words and immediately recognize them. The process of learning sight words is carried out when connections between graphemes and

phonemes are formed and bond the spellings of the words to their meanings and pronunciation in memory. Phonemic awareness and alphabetic knowledge are basic requirements for this process (Ehri, 1998, 2005). In order to understand the ideas behind a text it is necessary to read words effortlessly and this is the aim of reading. This model reinforces the basic requirement of phonemic and orthographic knowledge which was tested in the Knowledge Questionnaire in this research. It provided a basis for the knowledge and practices acquired during the process of PD development.

General use of the theory: Linnea Ehri (1991,1994,1995, 1998, 1999, 2002, 2005) presents a five- phase theory of sight word reading. The first four phases characterize the process of development of sight words and fifth phase is the Automatic Phase when proficient word reading takes place. "*Each phase of reading development is characterized by the predominant type of connection that bonds written words to their other identities in memory*" (Ehri, 2005, p.140). It describes the process of learning sight words from the preschool phase until mature reading is consolidated. At risk readers or or children with dyslexic characteristics need explicit instruction and a great deal of practice in order to acquire efficient reading competence. All aspects of word reading must be taught thoroughly. Understanding of the phases of sight word learning enables the teacher to pinpoint difficulties and apply suitable instruction. Experienced teachers are able to relate instructional methods to the phase of reading development when there is progress or lack of it, thereby providing a problem solving approach to the teaching of reading. They are able to prepare lessons that will meet the needs of the student since what is taught is dependent on the students' phase of reading development (Ehri and McCormick, 1998).

The first two phases of the Phase Theory of Sight Word Reading (Ehri, 1991, 1994, 1995, 1998, 1999, 2002, 2005) i.e. the pre-alphabetic phase and the partial alphabetic phase, describe the kindergarten or pre-school child's knowledge of the alphabetic system and their attempt to decode. They were thus not relevant to this study.

The third phase is the **full - alphabetic phase** and involves mastering connections between the phonemes in pronunciation and graphemes in spellings. This stage has also

been referred to as the spelling–sound stage (Juel, 1991), or the cipher reading stage (Gough and Hillinger, 1980) and is the starting point of the mature reading skill of an alphabetic system (Ehri, 1998). First grade students learning to read in L1 belong to this group. Learners learn and apply orderly relationships that associate sounds to the letters seen within words (Venezky, 1970, 1999). They are able to do this when they are familiar with major grapheme phoneme correspondences and they are able to segment pronunciation into phonemes that correspond to graphemes that are seen (Shankweiler, Fischer and Carter, 1974; Share, Jorm, Maclean and Matthews, 1984; Ehri, et al., 2001). Studies carried out by Ehri and Wilce (1979) found that knowledge of grapheme-phoneme correspondences provided a mnemonic system that secures sight words in memory since the spelling is linked to the pronunciation.

Decoding works as a self teaching mechanism (Share, 1995, 1999), and newly decoded words are retained in memory. Reading words through analogy also begins (Ehri and Robbins, 1992). Onset and rime helps to strengthen analogy and should be taught (Treiman, 1985), as well as basic morphology (Ehri, 2005). Text reading must be practiced as much as possible so that specific word forms will be retained in memory (Share and Stanovich, 1995). Phonics instruction is beneficial and provides transition from the partial to the full phase. All of the above have to be taught as part of the acquisition of knowledge and practices during the process of PD of the teachers.

The fourth phase is the **consolidated - alphabetic phase.** It is characterized by the connections formed out of morphemic and syllabic units for the retention of sight words in memory (Ehri and McCormick, 1998). Second grade students belong to this group. It is also known as the orthographic stage which reflects an emphasis on spelling patterns (Frith, 1985; Ehri, 1991). Students read faster and more fluently since they have a working knowledge of grapheme-phoneme relations and have built up a large sight vocabulary which enables them to decode common letter patterns as graphosyllabic units. Knowledge of letter chunks is valuable for reading multisyllabic words (Ehri, 2005). A study that analysed the syllable constituents in words showed that students who received this training retained the spelling of sight word in memory and confirmed its importance for sight word learning (Bhattacharya and Ehri, 2004).Understanding of the rules of

syllable division and morphology are also underpinnings of knowledge in teaching beginning reading and must be included in the content of the knowledge taught in the process of PD of the teachers.

The final phase is the **automatic phase** when the reader is able to read words proficiently and quickly. Most words encountered by the reader are familiar.

Ehri's theory (1991, 1994, 1995, 1998, 1999, 2002, 2005) provides a scientific basis as well as guidelines for teaching beginning reading to regular readers or readers at risk or those diagnosed with dyslexia. It reflects the implications for students who are having difficulties, including students with dyslexic characteristics, and enables the teacher to pinpoint the problems causing reading delay. The theory describes characteristics and practices that need to be carried during the different phases so that the instruction will be effective. The student is provided with the necessary scaffolding that enables him/her to progress from one phase to the next and the teacher can determine whether teaching techniques are working efficiently. The final outcome is the proficient reading of words in or out of context so that the meaning of the text can be understood.

In sum, Ehri's (1991, 1994, 1995, 1998, 1999, 2002, 2005) Phase Theory of Sight Word Reading reflects the learner's understanding and application of the alphabetic system when they read words. It explains the progression from the beginning of reading until proficiency is achieved and each stage is characterized by a specific connection that connects the written words to other identities in memory. Different mechanisms for word recognition are acquired during each phase. Knowledge of each phase enables a teacher to provide instruction that meets the needs of the learner since the student's phase of development should determine what is to be taught (Ehri and McCormick, 1998).

The EMPI programme carries out the teaching of reading in the same sequence as is described in Ehri's (1991,1994,1995,1998,1999,2002,2005) Phase Theory of Sight Word Reading. The theory confirms the necessity to teach alphabetic and phonemic knowledge as well as onset and rime, syllable division, morphology and to accelerate fluency so that word recognition is automatic and the reader can focus on the meaning of the text. It also expands the students' knowledge of spelling-sound regularities (Ehri, 2005). The theory

provides theoretical backing which is scientifically based and confirms practical instructional implications. Although it relates to English as L1 the underlying assumption of the programme was that the same aspects of the reading instruction have to be taught and consolidated. All of these components must be included in the planning of the teacher's knowledge and practices of an effective PD programme.

2.2.10 Summary

The ability to read English is needed to function in the 21st century. English has become an international language and a means of communication across cultures (Paredes and da Silva Mendes, 2002). Both phonological awareness and letter knowledge are a necessary prerequisite to reading. It seems that reading is best achieved if taught using a systematic, explicit approach known as synthetic phonics. The reader goes through several phases until word recognition skills are established and reading becomes fluent so that comprehension takes place. Spelling and vocabulary acquisition should not be overlooked. Teachers of beginning reading must acquire this knowledge in PD programmes.

2.3 Reading in English as a Foreign Language (EFL)

PD of EFL teachers needs to focus on the process of learning to read and the problems facing struggling readers who need to learn in English. Therefore, the process of PD should take into consideration the knowledge and practices required to bring about the required level of student achievement. This section relates to the relationship between foreign language (FL)/ L2 reading development and the claim that L1 and L2 reading is based on common linguistic abilities. Then it focuses on the orthographic typological differences. Phonological processing is then described and the need for intervention is emphasized.

2.3.1 Introduction

Children in Israel learn English as a compulsory requirement of the Ministry of Education. English is taught as the second or third language (for Arabic speaking students) and is considered a foreign language (EFL) since it is not taught in an English

speaking environment. The ability to read with fluency and to comprehend the text has been considered of utmost importance, sometimes even more than the oral skills (Eskey, 1970). Efficient word recognition facilitates reading comprehension in L1 (Perfetti, 1985, 1992; Byrne and Fielding-Barnsley, 1995; Wagner and Stanovich, 1996; Stanovich, 2000; Perfetti and Hart, 2001) as well as in L2 (Geva and Clifton, 1993; Koda, 2005). Strong reading proficiency is the key to success for the EFL / ESL (English as a foreign or English as a second language), or L2 learner, and is often the main reason for learning the language (Carrell, 1992).

The ultimate outcome of reading is effective reading comprehension. Lower level reading and word recognition skills are essential prerequisites for this process (Stanovich, 2000; Birch, 2002) and must not be neglected. Therefore, it is necessary to incorporate both 'top down' and 'bottom up' processes in both L1 and EFL. Sounding out words and reading them correctly are important lower level reading skills (LOTS) and EFL readers must master them. Research findings have shown that lower level processes such as word recognition, as well as higher level syntactic and semantic processes, serve as a distinction between those EFL readers who can be considered skilled or less skilled (Nassaji, 2003). If the bottom of the reading processor functions "*more efficiently and quietly*" (Birch, 2002, p.146) more attention will be left for the higher order processing skills. Phonological awareness should be taught as well as the names of letters since the beginning stages of reading in EFL are based on these factors and strong decoding skills will affect word and text reading (Lesaux and Siegel, 2003; Chiappe and Siegel, 2006; Geva and Zadeh, 2006). Therefore, it is necessary to invest time and care in the consolidation of the teaching of these skills at the outset of teaching reading in EFL. This aspect of the teaching of beginning reading was not taught thoroughly enough in the past years in Israel (Kahn-Horwitz, Roffman and Teitelbaum, 1998) and was likely to have resulted in the teachers' negative self efficacy.

Struggling readers learning to read in either L1 or EFL need an explicit, phonics approach (Swanson, 1999;Carnine, Silber, Kame'enui and Tarver, 2004; Minskoff, 2005). Eskey (1992, p.96) said that EFL readers needed help to "*hold in the bottom*" or to decode rather than guess.The EFL reader must decode efficiently since decoding is a

strong predictor of reading performance in L2 (Koda, 2005). In the past this area has been neglected in EFL in Israel resulting in far too many 'non readers' who have not mastered basic decoding or word recognition.

An explicit, multi-sensory, phonics approach has been found to be beneficial for novice EFL readers decoding ability (Lesaux and Siegel 2003; Koda, 2005;Vaughn, Mathes, Linan-Thompson and Francis 2005). This approach should be used to carry out efficient intervention of a foreign language (Kenneweg, 1988; Myer, Ganschow and Kenneweg 1989; Sparks and Ganschow 1991).

2.3.2 Theoretical Background to Reading in EFL

Theories about reading in L2/FL can be divided into two categories. The theories in the first category are linked by a common thread which shows a relationship between first and FL (or L2) reading development and the claim that L1 and L2 (or FL) reading is based on common linguistic abilities (Kahn-Horwitz, Shimron and Sparks, 2005). Therefore, the process of PD must make the teachers aware of this relationship and provide the necessary content knowledge and practices to cope with these difficulties from the outset. (The second category of theories is described below).

The following theories belong to the first category:

The Central Processing Hypothesis (Gholomian and Geva, 1999; Geva, 2006; Geva and Siegel, 2000) claims that cognitive and linguistic abilities underlie L1 and the second language (L2) reading skills (Geva and Wade-Woolley, 1998; Gholmain and Geva, 1999). These include phonological, orthographic, semantic, syntactic and morphological abilities, as well as rapid automatized naming or verbal memory (Hung and Tzeng, 1981; Mann, 1986; Cossu, et al., 1988; Lundberg and Hoiem, 1991; Naslund and Schneider, 1991; Durgunoglu and Hancin, 1992; Bowers, 1995; Geva and Siegel, 2000; Ganschow, et al., 1991; Sparks and Ganchow, 1991).

Children who have difficulties in any of these areas in L1 are liable to develop reading difficulties irrespective of the orthography (Hung and Zeng, 1981; Mann, 1986; Bowers, Golden, Kennedy and Young, 1994; Bowers, 1995; Correa and Heward, 2000; Geva and

Siegel, 2000). If students with dyslexic characteristics have difficulties in one language there is high probability that they will experience difficulties in other languages that they may have to learn, regardless of the orthography (Geva, Wade-Woolley, and Shany, 1993; Ho and Fong, 2005). This is reflected in the EFL classroom when learners exhibit difficulties in learning to read English.

The Linguistic Coding Differences Hypothesis (LCDH), (Sparks and Ganschow, 1993a, 1993b; Sparks, Ganschow and Patton, 1995) claims that poor L1 readers have difficulties with the **structural aspects** of the printed word particularly phonological and orthographic aspects as well as syntactic aspects. The LCDH offers further support for the importance of L1 for the process of L2 reading acquisition since students having difficulties learning L2 tend to have difficulties in oral and written skills in L1 (Sparks, Ganschow and Pohlman, 1989). This theory is based on the work of Vellutino and Scanlon (1986). Students with reading difficulties have deficits in the phonological, syntactic, morphological and semantic linguistic codes in L1, which affect their ability to learn a FL (Sparks and Ganschow, 1991).

The language deficits of students who have difficulty learning to read are compounded when they learn to read another language (Miller-Guron and Lundberg, 2000). Kahn-Horwitz, Shimron and Sparks (2006) found that fluent word reading skills in L1 (Hebrew) and good vocabulary knowledge are an indicator for internalization of the alphabetic principle in English for the beginning reader.

The Threshold Hypothesis (Cummins, 1979) **and the Developmental Inter-dependence Hypothesis** (Cummins, 1979, 1984, 1991) claim that L1 and L2 reading are related to common cognitive-linguistic abilities. The ability to read in L1 influences reading ability in L2 as well as the linguistic and academic abilities (Cummins, 1984; Verhoeven, 1991). The Threshold Hypothesis (Cummins, 1979) and the Developmental Interdependence Hypothesis (Cummins, 1979, 1984, 1991) are similar from a conceptual point of view to the LCDH. Cummins claims that highly competent L1 students will be successful L2 students (the Threshold Hypothesis, Cummins, 1979), and when two languages are taught the learning history in L1 provides insights into future difficulties in

L2/EFL (the Developmental Interdependence Hypothesis, Cummins, 1979,1984, 1991) but enhances both. Therefore, the success of learning to read in L2 is dependent on the literacy competence consolidated in L1 (Koda, 2005).

Research supports the Interdependence Hypothesis (Chitiri and Willows, 1994; Da Fontoura and Siegel, 1995; Abu-Rabia, 1997; Gholman and Geva, 1999) showing that word reading skills acquired in one language were transferred to another. Even when L2 oral proficiency is not fully developed pupils can learn to read and spell words and reach a level of accuracy which is similar to that which is achieved in L1 (Geva, Wade-Woolley and Shany, 1993; Gholamain and Geva, 1999; Arab-Moghaddam and Senechal, 2001; Lesaux and Siegel, 2003; Geva, 2006). If students with difficulties in L1 are identified, then it is possible to provide effective intervention before they fall behind their peers (Kahn–Horwitz, Shimron, Sparks, 2006). This finding is significant in preventing the emergence of an excessive number of non readers.

The second category of theories about reading in L2/FL focuses on the typological differences of the orthography of the languages being studied (Geva, 2006). Therefore, problems in reading and writing will appear across different languages due to the fact that specific orthographic features present different demands. PD must make teachers aware of similarities and differences between the typology of languages. This will affect their didactic practices.

The following theories belong to the second category:

The Script Dependent Hypothesis (Gholmain and Geva, 1999; Geva and Siegel, 2000) claims that the skills in a particular language are influenced by the orthographic structure, as well as the predictability or regularity of the rules of the grapheme phoneme correspondences (Lindgren, DeRenzi and Richman, 1985). Reading and writing problems will appear across languages as a result of the differences in the characteristics of the writing scripts (Lipka, Siegel and Vukovic, 2005). The orthography of a language can appear anywhere on a continuum between shallow and deep. If it is '*shallow*', such as voweled Hebrew or voweled Arabic, there is a regular grapheme–phoneme correspondence and the retrieval process tends to be systematic (Turvey, Feldman and

Lukatela, 1984; Lindgren, DeRenzi and Richman, 1985; Frost, 1994). When a phonological route is used, accurate decoding skills are acquired quickly. As fluency improves the student begins to read words without vowel representation and the orthography is deep with opaque spelling.

On the other hand, if a language has an irregular orthography and the grapheme correspondence is not predictable, as is the case in English, it is considered to be '*deep*' and the spelling sound relationship is '*opaque'* (Frost, Katz and Bentin, 1987). The "*… link between English orthography and its phonetic system makes it phonologically less recoverable than more regular alphabetic scripts such as Spanish and Persian"* (Gholamain and Geva, 1999, p.184). Accurate word recognition skills tend to develop more slowly (Geva, Wade-Woolley, Shany, 1993; Geva and Siegel, 2000) and they may take twice as long to learn (Seymour, Aro and Erskine, 2003).

Gholmain and Geva (1999) argue that the incidence of readers experiencing difficulties may be related to the complexity of the written language. The irregular orthographic system, together with differences that appear in Hebrew word morphology, are possible reasons for Hebrew speakers finding difficulty in acquiring reading in English. This transfer is possibly limited because of the depth of English orthography e.g. reading '*cat'* (simple cvc words) involve the same processes as a transparent orthography versus '*yacht'* or '*doubt'* (Kahn-Horwitz, Shimron, and Sparks, 2005). The complexity of the English orthography requires professional, systematic, explicit, phonics teaching in order to assure the consolidation of the novice reader's basic literacy skills (Sparks, Ganschow, Kenneweg and Miller, 1991) and should be consolidated in PD programmes.

2.3.3 Proficiency in EFL

Before the L1 reader begins to read he/she has established a basic linguistic foundation as a result of normal language development. L2 readers can usually draw on their previous literacy experience, but they do not have enough linguistic knowledge in L2 when they begin to read. Therefore, L2 reading necessitates dual –language involvement. However, oral proficiency in L2 may take years to develop. When L2 proficiency is at the initial stages, L2 vocabulary explains very little about L2 word recognition and spelling skills

(Geva, 2006). After a year of instruction in L2 (English) the performance on rapid naming and phonological awareness serve as predictors of word-based reading skills (Geva, Yaghoub-Zadeh, Schuster, 2000). Both Geva, Yaghoub-Zadeh and Schuster (2000) and Koda (2005) claim that oral language proficiency and word recognition skills develop independently. If one is acquired it doesn't mean that the other will be consolidated.

2.3.4 Phonological Processing in EFL

The beginning stages of reading in EFL are based on phonological awareness and the names of letters and should be included as the basis for the content knowledge taught in the process of PD. Both ESL learners and L1 learners take the same path to consolidate them (Gersten and Geva, 2003). These factors and strong decoding skills will affect word and text reading, and should thus be taught (Lesaux and Siegel, 2003; Chiappe and Siegel, 2006; Geva and Yaghoub Zadeh, 2006). They facilitate the encoding and decoding of large numbers of words (Kahn –Horwitz, Shimron and Sparks, 2005).

Slow letter naming speed is one of the strongest predictors of reading problems (Chiappe, Stanovich and Siegel, 1997). It also plays a role in the explanation of difference in L2 word recognition (Geva and Siegel, 2000; Geva and Wade-Woolley, 1998; Nassajizavareh and Geva, 1999). Speed of letter naming is essential for word recognition and word attack skills (Gholamain and Geva, 1999).

Phonological processing can be assessed independently of student's English oral language proficiency. Durgunoglu (2002) says that the cross-linguistic transfer in literacy development influences literacy instruction in EFL and that it is possible to base the instruction of phonological skills in L2 on the L1. Harrison and Krol (2007) found evidence in their study that for both adults and young ESL students it is possible to assess phonological processing skills in L2 in order to predict the reading performance in L2. This enables teachers to find at risk students as early as possible, making intervention more effective.

At risk or students with dyslexic characteristics show particular difficulties with the phonological and syntactical codes of L1. When they have to learn a new system they find themselves being "*thrown back*" (Sparks, Ganschow, Kenneweg and Miller, 1991, p. 97) to the situation they faced when they learned to read and write in L1. An interesting finding is that both at risk learners who were not diagnosed with dyslexia, as well as diagnosed with dyslexia, had almost the same deficits in their phonological coding (Sparks, Ganschow, Kenneweg and Miller, 1991). Both groups usually have difficulty learning foreign languages.

2.3.5 Summary

The process of PD for EFL teachers should deal with and emphasize the complexity of language acquisition and literacy skills in EFL. This knowledge plays an integral part in the theoretical basis of the process. The same cognitive and linguistic components and skills required for learning to read and spell in L1 are transferred for the acquisition of literacy in L2. A child who has difficulty attaining literacy in L1 will tend to reflect similar difficulties learning EFL. The cognitive and reading profiles of L2 reading disabled children are the same as the profiles of L1 reading disabled children. It takes longer to consolidate word recognition in a deep or irregular orthography such as English. The characteristics of different languages scripts determine the difficulties that students will come across learning these languages. Early diagnosis of at risk children with reading difficulties in L2 is necessary. Consequently, assessment and intervention should not be delayed.

2.4 Reading Intervention

PD programmes direct teachers to identify and intervene where necessary for struggling readers. In this chapter, the origins of reading problems are described and a rationale for early identification and intervention is given for the different student populations at risk. Two approaches to reading instruction are explained and practical implications, including suitable teaching frameworks and the characteristics of teachers, are elaborated on. Criteria for successful intervention are outlined and their application to the EFL reader

with dyslexic characteristics is justified. The EMPI programme is given as an example of an explicit intervention programme for struggling EFL readers.

2.4.1 Introduction

Recent research carried out on beginning reading has shown that most children with reading difficulties can achieve improved reading outcomes if they are identified as early as possible (Blachman, et al., 1999; Strickland, 2002; O'Connor, Fulmer, Harty and Bell, 2005; Vellutino, Scanlon, Small and Fanuele, 2006) and receive intervention (Vellutino, et al., 1996; Foorman, et al., 1998; Torgesen, et al., 1999; Torgesen, et al., 2001; Mathes and Denton, 2002; Denton and Mathes, 2003; Foorman, Brier, and Fletcher, 2003;Lyon, Shaywitz and Shaywitz , 2003; Schatschneider, et al., 2004; Lyon and Fletcher, 2006). Thus, teachers must identify the difficulties and implement correct solutions (Kamps, et al., 2008). Struggling readers have failed to learn to read since conventional methods have not worked for them. They are unable to learn on their own and in order to succeed they must be taught "*in ways that fit their instructional needs*" (Minskoff, 2005, p.xiii). Explicit instruction programmes, such as the EMPI PD programme, employ systematic, sequential, multisensory and intense intervention, providing the practical tools needed for the teaching of beginning reading to the individual struggling reader.

2.4.2 The Origins of Reading Problems

Deficits in phonological processing have been identified as one of the main causes for literacy difficulties (Goswami and Bryant, 1990; Hulme and Snowling, 1992; Stanovich and Siegel, 1994; Frith, 1995; Jackson and Colheart, 2001), particularly the manipulation of the phonemic segments of spoken words (Muter, Hulme, Snowling and Stevenson, 2004). Failure to master the alphabetic principle creates an obstacle to reading development because these readers are unable to identify new words in a text (Frith, 1985; Stanovich, 1986; Ehri, 1991; 1992; 1998; 1999, 2005; Juel, 1991; Share and Stanovich, 1995 and Byrne, 1998). Consequently, restraints are placed on the word learning processes that are needed to become a fluent reader (Ehri, 2002). Students, who do not consolidate strong word recognition skills and lack reading fluency, enter a spiral of failure and the Matthew effect sets in (Stanovich, 1986). Reading intervention

programmes should address the difficulties of phonemic awareness and letter knowledge which are the basis of the alphabetic principle (Byrne and Fielding – Barnsley, 1995; Hatcher, Hulme and Snowling, 2004). This is particularly important since far too many children are diagnosed with dyslexia, yet their difficulties are a result of inadequate teaching taught by teachers who lack the necessary knowledge and practices. This can be rectified if teachers undergo a comprehensive PD process. Furthermore, in Clay's (1987) opinion, many beginning readers experience reading difficulties during the early stages of reading acquisition as a result of experiential or instructional deficits rather than neuro-developmental difficulties. This supports the empirically based consensus that the numbers of children diagnosed with Reading disorders is over – inflated (Vellutino, et al., 1996; Vellutino, Scanlon, Small and Fanuele, 2006).

There are three groups of children who are at risk for reading difficulties and teachers should be made aware of the situation. They include children who have been diagnosed with dyslexia in their first language (either Hebrew or Arabic in Israel), children who come from a weak socio economic background and students known as 'non-readers' or 'false starters'.

Dyslexia: Children with dyslexia who have a 'language based disorder' have difficulties with word reading because of a weakness in their ability to process the phonological features of words (Torgesen, 1999; Vellutino and Fletcher, 2005). Their weaknesses are the result of neurobiological factors which are transmitted genetically and have a constitutional basis. Difficulties in the phonological processing make it hard to use the alphabetic principle to identify new words in a text (Share and Stanovich, 1995). Constraints will be placed on the word learning process which prevents them from becoming fluent readers (Ehri, 2002). (See appendix 1 for a definition of dyslexia).

The effect of socioeconomic status on academic performance: It is not uncommon to find that beginning EFL readers have difficulty learning the core reading skills in English. Duncan and Seymour (2000) found that weak learners in L1, coming from a poor socioeconomic background (SES), showed a delay in knowledge of letter sounds, letter names and word reading. Stanovich (2000) attributes the delay to lack of exposure to

advantaged learning environments, and less communication between families and school staff (Sirin, 2005). Studies have shown that the socioeconomic background also affects EFL acquisition (Olstain, Shohamy, Kemp and Chatow, 1990; Ministry of Education, Culture and Sport, Office of the Chief Scientist 1999). Students who fail to consolidate basic reading will not attain the required standard at the end of elementary school (Francis, et al., 1996).

Non readers or false starters: A third group may be added in the Israeli reality and they are neither with dyslexic characteristics nor coming from a poor socioeconomic background. This group is called '*non-readers'* or '*false starters'*. They fail to internalize the basic essentials of beginning reading and fall behind, exemplifying the Matthew Effect (Stanovich, 1986). They were probably taught using the whole language approach. However, teachers in the field have reported that they have to cope with excessively large numbers of students entering junior high school and high school, who are unable to read at the required level. Many have been incorrectly diagnosed with dyslexia, and inflate the percentage of children in need of special accommodations for test taking. Junior high school and high school teachers find themselves in the unique situation of teaching beginning reading. They must participate in PD programmes which enable them to teach the fundamentals of reading which was excluded from their original training.

2.4.3 Rationale for Early Identification and Intervention

It is important to provide early intervention since emerging evidence has shown that intervention started in kindergarten has positive effects (Scanlon, et al., 2005; Vadasy, Sanders and Peyton, 2006). Reading achievement during the stage of initial instruction is a reliable predictor of eventual reading success or failure (Juel, 1988; Stanovich, 1986; Torgesen, 2004). According to Strickland (2002, p.74) "*Early intervention is preferable to extended remediation"*. In Haager's opinion (2007), early identification may lessen the impact of reading difficulties. Good, Simmons, and Smith (1998) argue that trajectories of reading failure or success are established early. They will grow more discrepant with time, and consequently become resistant to change (Coyne, Kame'enui, and Simmons, 2001). When difficulties are picked up at an early stage, there is a possibility of providing

intervention and closing the gaps as early as possible (Vellutino and Scanlon, 2003). If intervention begins in the regular reading classroom, and is provided in the beginning by the expert reading teacher with professional understanding of instruction and the authority to act on expertise, the initial difficulties can be overcome. Otherwise, the chance of even attaining an average standard is low (Simmons, et al., 2008).

In the study carried out by O'Connor, Fulmer, Harty and Bell, (2005) their basic premise is that reading difficulties can be ***reduced*** if more attention is paid to the foundation skills of phonemic awareness, phonics, and word recognition. Children with phonologically based reading difficulties need an intervention programme that is phonemically based (Foorman, et al., 1998; Torgesen, et al., 1999; Ehri, 2002; Hatcher, Hulme and Snowling, 2004;). Their findings showed that early and continuous intervention from kindergarten through to third grade led to improved reading outcomes of children at risk. This is in correlation with other studies where phonological awareness training was given at the pre-school level (Bradley and Bryant, 1983; Lundberg, 1994). If intervention is provided early enough in an appropriate manner, teachers will be able to intercept the reading gap before the situation spirals out of hand and becomes overwhelming and insurmountable (Torgesen, 2004).

2.4.4 Approaches to Reading Instruction and Intervention

There are two instructional methods for the teaching of beginning reading in general education - either implicit or explicit instruction.

<u>Implicit meaning based instruction:</u> Implicit teaching is a constructivist or discovery method. Students discover independently what they are expected to learn and the teacher plays a limited role aiding the learning process (Goodman, 1986) Word identification and comprehension skills are not taught, because it is believed that the students will learn to identify words based on the general meaning of the reading material (Carnine, Silber, Kame'enui, and Tarver, 2004).The whole language method, does not work for struggling readers (Stahl and Miller, 1989; Stahl, MacKenna, and Pagnucco, 1994; Swanson, 1999; Carnine, Silber, Kame'enui and Tarver, 2004; Purdie and Ellis, 2005).

Explicit code based instruction: Struggling readers can become competent readers if the instruction provided meets their individual needs (Vellutino and Scanlon, 2003). They should be taught by good teachers who have undergone comprehensive PD that teaches a systematic explicit approach (Minskoff, 2005). Research has shown that explicit instruction, practicing phonemically decodable texts, works for all children including those at risk for reading failure (Foorman, et al., 1998; Snow, Burns, and Griffin, 1998; Juel and Minden-Cupp, 2000). Explicit teaching is student centred, it clarifies the learning objectives for the student, and the teacher takes on a dominant role aiding the learning process. (Minskoff, 2005).Explicit instruction is taught since research has found it effective for struggling readers learning word recognition skills (Swanson, 1999; Vaughn, Gersten and Chard, 2000; Gersten, Fuchs, Williams and Baker, 2001, Carnine, Silber, Kame'enui, and Tarver, 2004; Vaughn, Mathes, Linan-Thompson and Francis, 2005). The instruction is both phonemically explicit and carried out in an intensive and systematic way (Foorman, et al., 1998; Foorman and Torgesen, 2001).

An explicit approach is comprehensive and systematic and should be performance based (Minskoff, 2005). It is c**omprehensive** since all the skills needed for learning to read must be taught sequentially from pre-reading to comprehension. Assessment should be carried out to determine the student's level of mastery so that the teacher will know where to begin teaching. This way the level of difficulty can be controlled and students will not be expected to function at a level that has not been reached. It is **systematic** because the child moves from no mastery of a skill to complete mastery. Minskoff (2005) explains that explicit instruction is also **performance based** since a pre-test is carried out, teaching follows based on the findings, and a post test should be administered to determine if the weak skills have been mastered. This approach focuses on the awareness of language structure and function that enables the students to reflect on and manipulate language. A basis of phonemic awareness, syllables and morphology is necessary. A high degree of teacher centred presentation is required and the emphasis is on explicit instruction together with scheduled practice and feedback (Westwood, 2003c). The lessons build up word recognition and comprehension skills. Students are given reading materials at a level they can handle successfully (Strickland, 2003). In addition, direct instruction should be provided since spelling is a common difficulty for children with

reading difficulties (Bos and Vaughn, 2006) and was found to be beneficial (Berninger, et al., 2002;Wanzek, et al., 2006).

An explicit intervention programme should adhere to certain practical implications. Lessons should be success orientated and children should be taught either in a one- on-one framework or in small groups (Minskoff, 2005). A knowledgeable expert teacher, who has undergone PD, should carry out the instruction and not give up on the student because every child can become a successful reader (Minskoff, 2005).

One-on-one-reading intervention: Students who receive early individualized and intensive intervention in the first grade can attain the reading level of their peers (Clay, 1985; Vellutino, et al., 1996; Torgesen, et al., 1999; Foorman, 2003; Vellutino, Scanlon, Small and Fanuele, 2006). Research has shown that effective early literacy interventions that have been given within a one-on-one framework (Cohen, Kulik and Kulik, 1982; Pinnell, 1989; Wasik and Slavin, 1993; Juel, 1996; Elbaum, Vaughn, Hughes and Moody, 2000) were found to be the best kind of tutoring (Vaughn, Gersten, and Chard, 2000). According to Shaywitz, et al. (2004) children who received intervention, focused on evidence – based application of the alphabetic principle, not only improved their reading but also demonstrated increased activation in the neural systems for reading. This is the rationale behind the PD process that emerges from the EMPI programme. Other investigators (Richards, et al., 2000; Temple, et al., 2000; Simos, et al., 2002; Aylward, et al., 2003; Temple, et al., 2003) also found that effective reading intervention influences the neural systems in the brain so that reading improves.

One-on-one tutoring addresses the individual student's needs and provides opportunities to target specific difficulties (Lane, Pullen, Hudson and Konold, 2009). When classroom teaching is supplemented by individual tutoring, under- achieving students can make significant progress, even more than when instruction is given in a small group (Wasik and Slavin, 1993). The student can respond and receive immediate feedback, which helps in the development of effective reading strategies (Pinnell, et al., 1994; Van Der Heyden and Burns, 2005). The success of various intervention programmes such as Reading Recovery (Pinnell, 1989; Clay, 1993), Early Steps (Morris, Tyner and Perney, 2000) and

Success for All (Slavin, 2002) has also been accredited to one-on-one teaching arrangements.

Small group reading intervention: Instruction in small groups should be provided (Wise, Ring and Olson, 1999; Rashotte, MacFee and Torgesen, 2001) in an explicit, comprehensive, intensive and supportive manner (Foorman and Torgesen, 2001; Torgesen, et al., 2001).

Studies have shown that small group intervention can lead to reading improvement and can reduce the number of reading problems in the long term (Hiebert, Colt, Catto and Gury, 1992; Elbaum, Vaughn, Hughes and Moody, 1999; Hiebert and Taylor, 2000). For example, in the study carried out by Hatcher, et al. (2006) the results showed that on an average, children at the end of their first year with delayed reading development improved after being given small group reading intervention. Torgesen (2004) believes that it is necessary to increase instructional intensity for smaller numbers of highly at risk students in small groups, and to teach them frequently in the schools. They will learn more rapidly under these conditions. The class teacher can devote part of the day to working intensely with children who need similar instruction. In the meta- analysis carried out by Elbaum, Vaughn, Hughes and Moody (2000) they found that there was no difference in the academic benefits to students if they were taught individually or in a small group if the teacher was highly qualified and the intervention programme was well designed. This was in agreement with previous studies (Elbaum, Vaughn, Hughes and Moody, 1999; Swanson, 1999). Vellutino, Scanlon, Small, and Fanuele (2006) claim that instruction should be given in small groups at pre-school, and in first grade one-on- one.

Furthermore, the Reading Recovery Programme (Clay, 1993), given to struggling first graders, has enabled them to attain a level of accurate decoding, similar to their peers (Gomez-Bellenge, Rogers and Fullerton, 2003). Children at risk for reading difficulties who were given intervention in word-level reading skills and basic comprehension strategies, in small groups, improved their reading skills (Torgesen, Wagner and Rashotte, 1997). In the U.S.A., the Response to Intervention (RTI) model has become an alternative to traditional remedial and special education services (Dickman, 2006). The

main rationale behind this approach is that if children receive timely intensive intervention, based on research-based instruction, they will be able to alter their reading achievements (Coleman, Buysse and Neitzel, 2006; Denton, Fletcher, Anthony and Francis, 2006). (See appendix 9 for additional intervention programmes).

2.4.5 Criteria for Effective Intervention Programmes

In order for intervention programmes to be effective several procedures should be taken into consideration. Struggling readers learn best when they are carefully guided by competent teachers (Minskoff, 2005). S/he is expected to implement scientifically based reading instruction (Torgensen, et al., 2001; O'Connor, Fulmer, Harty and Bell, 2005) and must be well trained in the necessary practices and skills (Stephens McIntosh, Graves and Gerstein, 2007). The teacher, rather that the programme teach the child to read (Lose, 2007). Effective reading intervention programmes combine explicit, multi sensory teaching in phonological awareness together with the use of a highly structured reading instruction using a text which is matched to the level of the learner (Hatcher, Hulme and Ellis, 1994; Hatcher, Hulme, and Snowling, 2004; Lane, Pullen, Hudson and Konold, 2009). The teacher provides clear instructional goals and breaks the tasks into smaller cognitive units (Swanson and Hoskyn, 1998; Swanson, 1999; Vaughn, Gersten and Chard, 2000; Carnine, Silber, Kame'enui and Tarver, 2004; Minskoff, 2005). Phonemically explicit instruction (phonics) requires teachers to develop phonemic awareness and to teach the connections between letters in print and their sounds within words (Foorman, et al., 1998; Juel and Minden-Cupp, 2000; Foorman and Torgesen, 2001; Kamps, et al., 2008). These relationships must be taught in a comprehensive fashion (Foorman, et al., 1998) and the programme should be carried out intensively (Foorman and Torgesen, 2001; Gersten, Fuchs, Williams and Baker, 2001; Haager and Windmueller, 2001).

Additional requirement of intervention programmes is the need to provide emotional and cognitive support (Foorman and Torgesen, 2001). At risk children need positive feedback and consistent positive enforcement. The skills must be gradually built up. Scaffolded instruction must be given so that skills are sequenced and gradually taught, and a teacher-

student dialogue should develop, enabling him/her to use the correct thinking skills to discover how to solve a task (Foorman and Torgesen, 2001). The students must be actively engaged and they should experience academic success in every lesson (Williams Bost and Riccomini, 2006).

Fitzgerald (1995) reported that the instructional methods used for teaching reading in L1 are also effective for ESL novice readers and may require certain modifications. There is some evidence that word level instruction that has been validated with L1 learners also works for the ELLs, "*...such as explicitly teaching phonological awareness, letter-sound relationships, and decoding, especially done along with meaningful experiences in engaging text*" (Haager, 2007, p. 214). All of the above should be incorporated in the process of PD of intervention teachers in EFL.

Gunn, et al. (2005) found that there is positive value to supplemental instruction focused on word recognition skills, and the benefits were still seen two years later. The critical elements of a reading intervention programme for English language learners (ELLs) or EFL readers at risk should include systematic and structured instruction, opportunity to read and experience success, consistent feedback, practice and monitoring (Gersten and Baker, 2000; Guthrie, Schafer and Huang, 2001). When EFL at risk learners are explicitly aware of the goals they need to achieve, and are provided with a success orientated programme, they become more effective readers (Tam, Heward and Heng, 2006). In the opinion of Tam, Heward, and Heng, (2006) vocabulary instruction has been de-emphasized in intervention programmes even though it is directly connected to reading comprehension.

2.4.6 Intervention in EFL

Foreign language intervention that is based on an explicit multi-sensory approach (Kenneweg, 1988; Myer, Ganschow, and Kenneweg, 1989; Sparks and Ganschow, 1991) has been found to be beneficial for novice EFL readers (Lesaux and Siegel, 2003; Vaughn, Mathes, Linan-Thompson and Francis, 2005).

The teaching of phonemic awareness and phonics are necessary for the teaching of reading in L2. They should be taught intensively, and the programmes should be modified to meet the needs of the FL learner (Manyak and Bauer, 2008). The phonology of the language is taught using direct and explicit teaching and the student is able to see, hear and 'do' (write) the language. Small amounts of material are presented and mastered using a multi-sensory approach. The EMPI programme is designed along these underlying principles and the same rationale lies behind the practical teaching.

2.4.7 The EMPI Programme

The Explicit Multisensory Phonics Intervention (EMPI) programme is an example of an explicit, structured, multi-sensory intervention programme that has been taught to both pre- service and in- service teachers working with at risk EFL students. It adheres to the criteria for successful intervention mentioned above. The aim is to provide teachers with practical tools that will enable them to teach beginning reading to children who have been diagnosed with dyslexia or at risk. The programme is based on The Hickey Multisensory Language Course (Augur and Briggs, 1992), as well as the Parallel Distributed Processing Schematic of Reading (Adams, 1990, 2003), and The Phase Theory of Sight Word Reading (Ehri,1991,1994, 1995, 1998, 1999, 2002, 2005). Over the years, additions and small changes have been made to the original programme, that relate to the needs of the struggling reader who is learning to read in EFL (See appendix 7 - Outline of the course ‘Teaching Reading in English to Children with Dyslexic Characteristics or at Risk-The EMPI Programme, for an example of the structures of the lesson plan and additions; and see appendix 8 - The Ten Point Lesson Plan).

The EMPI uses a ten point lesson plan for every intervention session. An **explicit** approach is adopted. The objectives are defined clearly and the child understands what they “*need to learn and how to do so*” (Minskoff, 2005, p.231). The teacher models for the child and guided practice is provided in small groups or individually. The student is then able to carry out independent practice of reading and writing which is success orientated. The skill is consolidated and can be applied to other settings or materials. The aim is to acquire strong word identification skills so that words will be read accurately

and quickly, since a large store of sight words have been built up in memory (Ehri, 2005, Share, 2004b).

A multi-sensory instructional approach is applied throughout the lesson. It simultaneously links reading, writing, speaking and listening together through the use of the auditory, visual, tactile and kinaesthetic sensory modalities (Birsh, 2005). A phonics approach to reading is incorporated. Children are taught to make connections between letters (graphemes) and the sounds (phonemes) they represent (Moats, 2005). The child is learning the basic sounds for reading systematically, and will be able to apply them effectively to the decoding of other texts. The reading intervention programme that is taught includes the three previously mentioned characteristics, consolidates a strong basis of phonological awareness and uses structured texts relevant to the level of the learner (Hatcher, Hulme, and Snowling, 2004). Several innovations have developed over the years which take into consideration the needs of the struggling EFL reader or with dyslexic characteristics. The lesson plan contains ten steps. Phonological awareness is consolidated, particularly phonemic awareness, including awareness of sounds at the beginning, middle and end of words and segmentation and blending. The list of words provided for recognition and spelling is also used to teach vocabulary. There is a reciprocal relationship between the growth of vocabulary acquisition and reading (Stanovich,2000). Therefore, on-going vocabulary acquisition is vital for reading comprehension in EfL (Amdur, et al., 2009). Students must first understand word meanings that are heard before they comprehend words that they read (Minskoff, 2005). Four to five words are taught per session for active use. Another innovation is the development of multi-sensory readers. The original approach stresses the importance of teaching reading and writing together as well as providing multi-sensory input. Teachers prepare a multi sensory reader for every sound taught. The reader contains a text incorporating sounds that have been taught, as well as the topic of the lesson. The text is illustrated using multi-sensory ideas and appears as a real book. A list of high frequency words is provided, as well as activities, which develop comprehension skills. The student is able to read the text because all the sounds are familiar, and there is a feeling of success and achievement since a book is read in each teaching session.

2.4.8 Summary

A PD process, experienced by both in-service and pre-service teachers, will enable them to alleviate and deal with difficulties faced in the field. Early intervention provides the instruction so that at risk students for reading difficulties can close the gaps before difficulties become too great and lead to the Matthew Effect. Both small groups and one-on-one instruction succeed in ironing out difficulties, and most students internalize reading at the required level if intervention is provided on time using an explicit systematic approach.

2.5 Summary of the Literature Review

The literature review has dealt with four main issues: professional development, literacy acquisition, English as a foreign language, and intervention in EFL. It has shown that if the process of PD incorporates specific criteria, it is likely to change teacher practices and thereby may increase student achievement. PD is a process that deepens teachers' knowledge and enables them to change teaching practices. As a result they may observe improved academic achievement of the students. Their beliefs will change once this is established. Three models of PD were described. Guskey (1986, 2002) described the order of change, whereas Ingvarson, Meiers & Beavis (2005) add the effects of structural and process features on knowledge, practices and teacher sense of efficacy. Garet, et al., (2008) showed that there are three structural features and three core features of PD that are responsible for improving teachers' knowledge and practices.

Effective PD is likely to alter teachers' negative self-efficacy into a positive one. Knowledge, teaching practices, improved academic achievement, and change in teachers' beliefs, are important outcomes of PD. Change in teacher self efficacy will follow, reflecting how teachers feel about their ability to bring about good student achievement. Teacher commitment is interrelated with self efficacy. All components are part of PD, and are integrated into effective classroom teaching.

Literacy acquisition is achieved if taught using a systematic, explicit approach known as synthetic phonics which is the underlying basis of content knowledge acquired during the

process of PD. The different components of reading instructions have been elaborated: phonological awareness and alphabetic knowledge, phonemic awareness, phonics and spelling. Two basic theories of reading acquisition have been presented: Ehri's (1991, 1994, 1995, 1998, 1999, 2002, 2005) Phase Theory of Sight Word Reading, and Adams' (1990, 2003) Parallel Distributed Processing Schematic of Reading.

The acquisition of beginning reading in EFl is a complex process, involving the same cognitive and linguistic components that are required for learning to read in L1. A child who experienced difficulties attaining literacy in L1 tends to reflect similar difficulties learning EFL. Further, it takes longer to consolidate word recognition in a deep or irregular orthography such as English. Thus, early diagnosis of at risk children with reading difficulties in L2 is necessary and intervention should not be delayed.

The purpose of early intervention with students at risk for reading difficulties is to close the gap before the Matthew Effect sets in. Work with small groups and individual instruction has the potential to succeed so that students reach advanced grades reading at the required level. Intervention should be provided on time using an explicit systematic approach.

The EMPI programme was developed as a process of PD aiming to improve the quality of reading instruction in EFL to children at risk for reading difficulties.No model of the process of PD of the EFL teacher was found in the literature. It is based on the integration of the three models of PD described by Guskey (1986, 2002); Ingvarson, Meiers and Beavis (2005; Meirs and Ingvarson, 2005); Garet, et al., (2008) as well as two models of literacy acquisition (Adams, 1990,2003; Ehri, 1991,1994, 1995, 1998, 1999, 2002, 2005). They outline the process of PD and its components which, with the addition of teacher negative and positive self efficacy, form the basis to the cyclic model of PD developed in this research.

In the next chapter the gap in knowledge is described, the conceptual framework is discussed and the research questions are presented.

3. Gap in Knowledge and Conceptual Framework

This chapter starts with a description of the gap in knowledge in the area of the PD of EFL reading teachers. It continues by outlining the conceptual framework of the research and finally presents the research questions.

3.1 Gap in Knowledge

The literature review has presented various models of the impact of the process of professional development of educators. However, they lack certain aspects.

1. No model was found that demonstrates the impact of the process of PD of EFL reading teachers.

2. In each of the models described, several basic components of the impact of the PD process are included but others are missing. The model of teacher change (Guskey, 1986, 2002) lacks the components of knowledge and self efficacy. The model of relationships between structure, learning processes and impact of professional development programmes (Ingvarson, Meiers and Beavis, 2005; Meiers and Ingvarson, 2005) lacks beliefs and negative self efficacy. The Theory of Action for the Early Reading PD Interventions Study (Garet, et al., 2008) also lacks both positive and negative self efficacy and beliefs.

3. Negative self efficacy has not been included as the trigger that sets the process of PD in motion in the models described in the literature.

Further, research about the impact of the process of PD is lacking in the area of EFL reading as major studies have been carried out in other areas (e.g., Desimone, et al., 2002). Thus, it is unknown whether the impact of the process of PD of EFL reading teachers is similar to that of other educators. In order to fill this void there was a need to conceptualize the model of the impact of the process of PD of EFL reading teachers, incorporating all hypothesized components of the PD process and test it empirically.

The EMPI programme was developed as a process of PD for EFL reading teachers. Its knowledge basis rests on a systematic, explicit, synthetic phonics approach. The impact of the programme, left on teachers' knowledge and practices, beliefs, student outcomes and teacher self efficacy, which are the underlying components of the process of PD, has not been examined yet.

In light of this gap in knowledge, the present research set out to examine a model that was developed for the PD of EFL reading teachers. In doing so it also examines the effects of the EMPI programme on the process of the teachers' PD. The basic assumption is that excellent teachers are an integral part of successful education (Darling-Hammond, 2006). Therefore high quality PD for teachers is the means to bring about change, raise students' academic attainment (Fullan, 2001) and ultimately improve teachers' self efficacy.

3.2 Conceptual Framework

A cognitive-psychological view of learning (Putnam, Lampert and Peterson, 1990; Borko and Putnam, 1995) underlies this research. It claims that a person's knowledge structure and mental representations of the world play a central role in perceiving, thinking and acting. Teachers' thinking, thus, is influenced by the knowledge they have, and in turn influences their actions in the classroom (Borko and Putnam, 1995). According to this view change in practice must be preceded by a change in knowledge.

In this research adult learning is conceptualized as problem-oriented. It occurs when life situations pose problems (Knowles, 1984; Gold, 1987; Chapman, 1988; Moll, 1990). Prevailing concepts are dilemma, disequilibrium and conflict. An existing cognitive-psychological equilibrium is altered (Schein, 1969, 1988) causing the individual to search for new information. The new information undergoes 'cognitive redefinition', and is integrated into the person's cognitive structures. Integration leads to the establishment of a new equilibrium. The cognitive restructuring is influenced by the intensity of the cognitive discrepancy, the social context, and opportunities for experimentation with new practice (Schein, 1969, 1988). Learning will not take place unless problems implicate routine practice, knowledge or beliefs. According to this view (Knowles, 1984) adults

play an active role in their learning: they carry their existing cognitive structures into the learning experience, and they may actively search for new learning opportunities and resources that will solve the dilemmas, disequilibrium and conflicts they face. This is inter-related with the concept of self efficacy (Bandura 1977; Bandura, 1989) which is both the trigger and the result of the teachers' learning process. Self efficacy is a cyclic sense of confidence connected to the performance of a certain task (Zimmerman, Bandura and Martinez-Pons 1992).

This is the general theoretical view of professional development in this research. Three models serve as the basis for its conceptual framework in terms of professional development, and another two in terms of reading acquisition.

Models of professional development:

1. A model of teacher change (Guskey, 1986, 2002).

2. Relationships between structure, learning processes and impact of professional development programs (Ingvarson, Meiers and Beavis, 2005; Meiers and Ingvarson, 2005).

3. Theory of Action for the Early Reading PD Interventions Study (Garet, et al., 2008).

Models of literacy acquisition:

1. A parallel distributed processing schematic of reading (Adams, 1990, 2003).

2. Ehri's phase theory of sight word reading (1991, 1994, 1995, 1998, 1999, 2002, 2005).

In the following section a description of the essence of each model is provided.

3.2.1 Models of Professional Development

A Model of Teacher Change (Guskey, 1986, 2002)

According to Guskey (1986, 2002) the aim of PD is to bring about changes in teaching practices that will improve student learning outcomes. His model was developed as a response to classical PD models that attempted to begin the process of teacher change with a change in beliefs and attitudes, but were unsuccessful (Huberman and Crandall, 1983; Huberman and Miles, 1984; Guskey and Huberman, 1995). Guskey's main claim is that significant changes in teachers' attitudes and beliefs will only come about after the successful implementation of new practices reflect improvements in student learning. The temporal sequence of the outcomes is important: professional development -- > change in teachers' classroom practices -- > change in student learning outcomes -- > change in teachers' beliefs and attitudes. (For a detailed description see section 2.1.4.)

Relationships between structure, learning processes and impact of professional development programs (Ingvarson, Meiers and Beavis, 2005; Meiers and Ingvarson, 2005)

The model that Ingvarson, Meiers and Beavis (2005) and Meiers and Ingvarson (2005) developed is research based. They used previous research on the critical features of effective professional development (Hawley and Valli, 1999), the work of Loucks-Horsely, Hewson, Love, and Stiles (1998) and Sykes (2002) as a basis for strategies used to promote professional learning, and the logic of Heller, Daehler, and Shinohara (2003) and Killion (2003) regarding how everything comes together to bring about effective teacher learning. They developed an evaluation tool and used it with different teacher PD programmes in Australia. Their resulting model contains the main features of effective PD that explain the differences in the success of professional development programmes. Four areas of impact were noted that result from PD. They include teachers' knowledge, teaching practices, student learning and teacher efficacy. The most consistent effects were content focus, particularly how students learn and are taught content, active learning as well as follow up. The block containing 'opportunity to learn' variables affected the programme outcomes the most. Active learning affected teachers' practices and self

efficacy. The model suggests that structural features and opportunities to learn lead to impact in knowledge, practice, student learning and teacher efficacy. (For a detailed description see 2.1.5.)

Theory of Action for the Early Reading PD Interventions Study (Garet, et al., 2008)

The Theory of Action for the Early Reading PD Interventions Study (Garet, et al., 2008) applies the key features of promising professional development that are described in the studies carried out by Garet, et al. (2001) and Desimone, et al. (2003). The model that they developed is based on features of professional development that were identified in the literature (Garet, et al., 2001; Cohen and Hill, 2001; Elmore, 2002), as well as an analysis of survey data in the USA (Garet, et al., 1999) that provided self reported changes in knowledge, skills, and teachers' classroom teaching practices. They outline six key characteristics which fall into two main categories. The three structural features are *duration, form of activity and collective participation* and describe how PD is organized. They allow for the implementation of the core features. The three core features are *focus on content, active learning,* and *coherence* and characterize what takes place during the process of PD. High quality PD incorporates all these features and leads to increased teacher knowledge which is expected to change teaching practices that should lead to student academic outcomes. (For a detailed description see 2.1.6.)

3.2.2 Models of Literacy Acquisition

A Parallel Distributed Processing Schematic of Reading (Adams, 1990, 2003)

Adams' PDP Schematic of Reading (1990, 2003) presents reading as an interactive process and all the levels of processing mutually coordinate with each other so that proficient reading will result. The model is made up of four processors. The phonological processor processes the speech sound system. The orthographic processor processes the letters, the letter patterns and whole words. The semantic processor stores the meanings of words and the context processor interprets words within context (Moats, 2005). Beginning reading instruction must activate all the processors. (For a detailed description, see section 2.2.9.)

Ehri's Phase Theory of Sight Word Reading (1991, 1994, 1995, 1998, 1999, 2002, 2005)

This model describes the developmental pathway of the phases of reading development and looks at the way printed words are stored in memory at a particular moment in time (Johnston and Watson, 2009). Ehri (1991, 1994, 1995, 1998, 1999, 2002, 2005) developed a five phase theory of sight word reading which includes four phases that characterize the development of sight word acquisition and the final fifth stage which is called the automatic phase when proficient word reading takes place. The first phase- the pre- alphabetic phase, and the second, the partial alphabetic phase, are pre reading phases. The third phase is the full alphabetic phase which involves complete connections between all the phonemes in pronunciation and graphemes in spelling. The fourth phase is the consolidated phase which involves connections formed out of morphemic and syllabic units. When a reader reaches the final automatic phase s/he relies on memory of meaning, pronunciation of the whole word and connections between letters and sounds. S/he no longer needs to blend sounds or draw analogies but word recognition is automatic and allows for concentration on the meaning of the text. (For a detailed description see 2.2.9.)

These five models and the concept of self efficacy served as the conceptual basis for the current research, beginning the PD process in negative self efficacy and ending with positive self efficacy. Guskey's model (1986, 2002) provides the temporal sequence of PD which advocates a change in practices **before** changes in beliefs. Ingvarson, Meiers and Beavis (Ingvarson, Meiers and Beavis, 2005; Meiers and Beavis, 2005) add the needed component of a change in knowledge and an additional result in self-efficacy as areas impacted by PD. Garet, et al. (2008) look at the essential features of PD which consolidate knowledge that changes practices and leads to improved student attainment.

The two models of literacy acquisition are the basis of knowledge and practices acquired throughout the process of PD of EFL teachers.

Ehri (1991, 1994, 1995, 1998, 1999, 2002, 2005) provides a model of sight word reading based on the ability to master the alphabetic principle and to match phonemes to graphemes. A connection-forming process lies at the heart of sight word learning.

Connections are created that link the form in writing to pronunciation and meaning. Adams's model (1990, 2003) describes the functional systems that interact in the process of reading. Her model incorporates the semantic processor that supports the necessity to teach vocabulary parallel to the teaching of sounds.

The conceptual framework for the current research is based on the integration of these models of PD with models of literacy acquisition. In addition, it initiates the process of PD from negative self efficacy through to positive self efficacy.

The conceptual model that was developed for the current research is presented in the Figure 4.

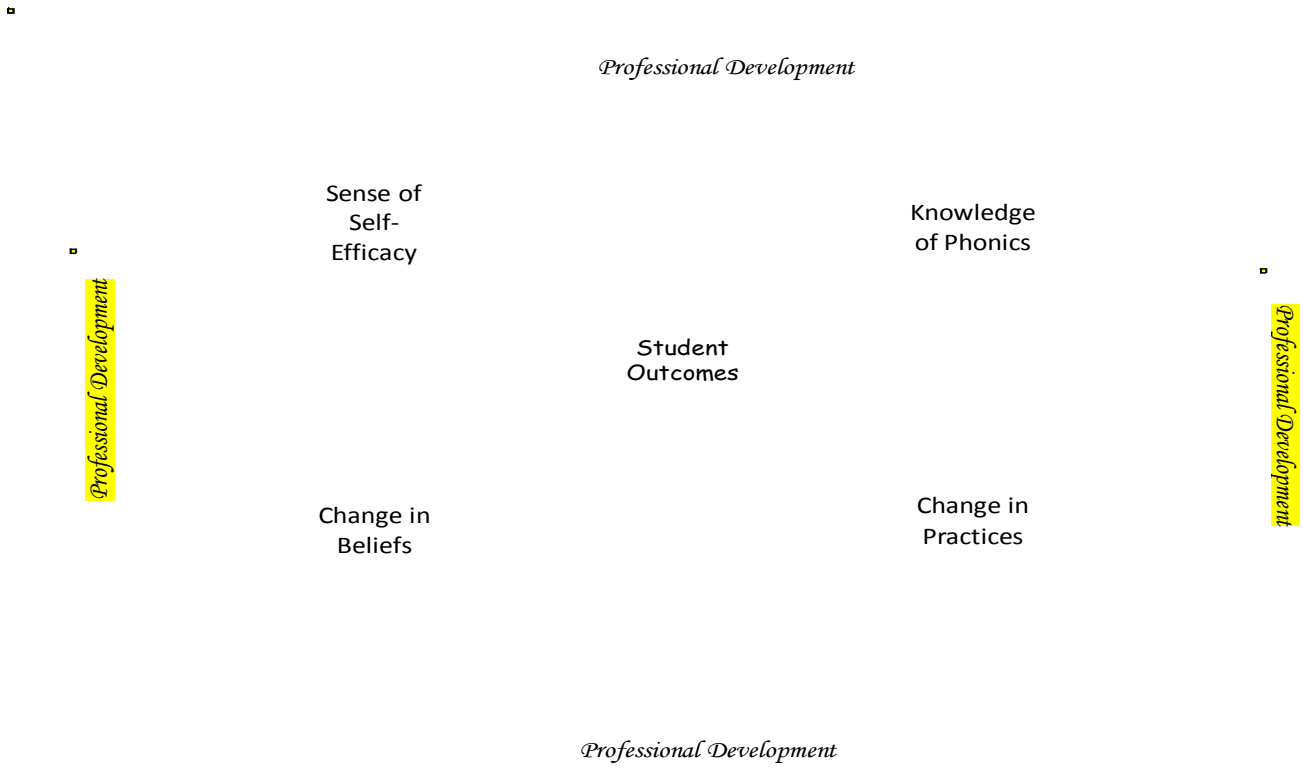

Figure 4 Model of Professional Development of EFL Teachers

The goal of this research is to evaluate the impact of the process of PD of the EFL teachers. The underlying assumption was that PD of the EFL teachers would bring about better teaching practices. The hypothesis was that teachers of beginning reading lacked basic knowledge and practices needed to teach the essentials of beginning reading. The EMPI programme provided the process of PD that was expected to leave an impact on the teachers' knowledge, practices and beliefs, improve student attainment, and turn the teachers' negative self efficacy into positive self efficacy.

3.3 Research Questions

As a result of the conceptual framework the main research question was:

What was the impact of the EMPI programme on the process of PD of EFL reading teachers?

Three specific research questions were posed.

1. What were the incentives of the teachers to join the programme?

2. Which aspects of the teachers' knowledge changed during the programme, and to what extent?

3. How did the teachers perceive the impact of the programme on their PD in terms of:

a. self efficacy

b. individual professional development.

c. knowledge

d. teaching practices

e. student outcomes

f. beliefs and attitudes

The next chapter describes the methodology of this study, its rationale , design, methods used and for data collection and data analysis.

4. Research Methodology

This chapter starts with a description of the design of the research and the rationale for choosing it. It continues with a description of the research population and sample followed by a description of the methods used for the data collection. Reliability and validity are discussed next as well as the researcher's role in the process. Research procedure is outlined and methods of data analysis are summarized. Finally the ethics of the study are elaborated on.

4.1 Design and Rationale

The aim of the research was to determine whether the EMPI programme had left an impact on the professional development of the EFL teachers who had participated in the course resulting in improved practices.

A mixed methods research was carried out in this thesis.

"*Mixed-methods research is empirical research which brings together quantitative data (and methods) and qualitative data (and methods)*" (Punch, 2005, p.292). The design was chosen in order to examine the teachers' actual change in knowledge on the one hand, and their subjective evaluation of the process of their individual PD on the other hand. Thus, two modes of data collection were applied: one was a knowledge questionnaire (Questionnaire #1) that assessed actual change in knowledge quantitatively, and the other was a questionnaire about PD (Questionnaire #2) that evaluated the teachers' perception of their own PD qualitatively. Furthermore, within the qualitative methods an unstructured interview was carried out in order to identify additional categories related to PD beyond those covered in the questionnaire.

The conceptual framework of the research includes PD theories (Guskey, 1986, 2002; Ingvarson, Meiers and Beavis, 2005; Meiers and Ingvarson, 2005; Garet, et al., 2008) that underlie the process of PD Questionnaire (#2). In addition the conceptual framework is based on the theories of Ehri (1991, 1994, 1995, 1998, 1999, 2002, 2005) and Adams

(1990, 2003) for literacy acquisition, who describe the importance of phonological and orthographic knowledge, which were the basis for the Knowledge Questionnaire (#1).

It was essential to use a mixed methods research in order to fulfil the aims of the research. One method on its own did not provide enough data. The quantitative knowledge questionnaire (Questionnaire #1) alone could not respond to the process of PD, while the qualitative questionnaire and interview (Questionnaire #2) on their own could not detect an actual change in knowledge which is a basic requirement for PD and leads to change in practices. This design provided a comprehensive picture of the impact left on the teachers' PD by the EMPI programme.

In light of the mixed methods design a post positivistic constructivist paradigm was used which was inductive and interpretive, together with a deductive positivistic design.

"*Positivism is an epistemological position that advocates the application of the methods of natural science to the study of social reality and beyond* " (Bryman, 2004, p.542). It claims that "*science provides us with the clearest possible ideal of knowledge*" (Cohen, Manion and Morrison, 2007, p. 11). It "*implies a particular stance concerning a social scientist as an observer of a social reality*" (Cohen, Manion and Morrison, 2007, p.10). The general doctrine of positivism says that knowledge that is genuine is based on "*sense experience and can be advanced only by means of observation and experiment*" (Cohen, Manion and Morrison, 2007, p.9). Empirical research was carried out in the quantitative tradition since the aim was to examine change in knowledge. Therefore, the data collected was numerical (Punch, 2005).

Post positivism is an epistemological position that is inductive and reflects the subjective responses or "*an emphasis on the ways in which individuals interpret their social world*" (Bryman, 2004, p. 20) making it qualitative research.

Post positivism often leads to using qualitative methods when the aim is to understand the respondents' interpretation of their experiences. In the current research post positivism serves as the basis for examining the teachers' interpretation of the PD process they underwent. Within the post positivistic approach questionnaires and unstructured

interviews were used. The purpose of the unstructured interviews, beyond the questionnaires, was to determine if there were additional categories of PD that had been overlooked. Unstructured "i*nterviews enable participants- be they interviewers or interviewees- to discuss their interpretation of the world in which they live, and to express how they regard situations from their own personal point of view. It is not concerned with collecting data about life: it is part of life itself, its human embeddedness is inescapable*" *(*Cohen, Manion and Morrison, 2007, p.349).

Using a naturalistic approach with case studies, observations or focus groups would not have provided enough data to consolidate a model of PD for EFL reading teachers. Therefore, a mixed methods positivistic and post positivistic design was used.

4.2 Research Approach

Within the mixed methods, positivistic and post positivistic design, a cohort longitudinal approach was applied. Bryman (2004, p.46) explains that " *the cohort is made up of people who all share the same characteristic*". A cohort study is the examination of "*specific sub-population, or cohorts, as they change over time*" (Babbie, 2002, p.98).

Samples from different cohorts of teachers and student teachers have participated in the EMPI programme. The research enabled to determine the extent to which there was a basic underlying basis of knowledge, and the extent of change in knowledge resulting from participation in the programme. Further, the cohort approach enabled the researcher to examine the process of PD of cohorts of teachers who had participated in the programme over an extended period of time (1991-2005).

That is, applying a cohort approach with a relatively large sample provided a description of the state of knowledge in the field, as well as a description of the process of PD that teachers who participated in the programme underwent. This could not have been achieved with a cross-sectional approach.

4.3 Research Population and Sample

The population of this research consists of pre-service EFL teachers and in-service EFL teachers in Israel. Pre-service teachers and in-service teachers were sampled from two academic colleges in the north of Israel. In addition, four veteran teachers participated in the study as interviewees.

The participants in the research reflect the continuum of EFL teachers in Israel. They range from pre-service student teachers still in training at the local Teachers Training Colleges through to veteran teachers with a minimum of three years of experience in the field to teachers about to go on pension.

They were all able to read, write and spell in English fluently. They spoke either Hebrew or Arabic as their L1. Some were native speakers of English and a few spoke other languages as their mother tongue for example Russian, French, or Spanish. The majority were females. The population that was sampled enabled the researcher to get insights into the full spectrum of English Foreign Language teachers in the north of Israel.

The sample is divided into three parts:

1. Students participating in the EMPI programme from 2004-2008. (These were both pre-service and in-service teachers, who filled out Knowledge Questionnaire #1).

2. In-service teachers with at least three years experience who had participated in the EMPI programme from 1991-2005. (They filled out the Process of PD Questionnaire #2).

3. Four veteran teachers (who were sampled for the unstructured interviews).

Sample of students in EMPI programme 2004-2008

The pre-service teachers were students at the colleges who were participating in courses to complete their B.ED degree and were studying in either second, third or fourth year. Another small group was adult academics who were retraining to become English teachers. They were participating in an intensive two year course to obtain a teaching

certificate recognized by the Ministry of Education which enables them to go into the field and teach EFL.

The in-service teachers were teachers who were participating in courses related to dyslexia being given at the college. They all had a minimum of three years experience teaching EFL in the field. Some were junior high school teachers who were looking for practical solutions to the non – readers in their classes. There were 147 students at pre-test and 116 at post test, from eight groups of students, as shown in Table 1. Pre-test groups included 12 to 31 students, averaging at 18.38 per group (SD=6.37), and post-tests groups included 6 to 25 students, averaging at 14.50 per group (SD=5.63). Details by group and time are provided in Table 1.

Table 1

Distribution of students by group and time (N=263 questionnaires)

Group	**Pre test (N=147)**		**Post test (N=116)**		**Total**	
	N	%	N	%	N	%
1	31	21.1	6	5.2	37	14.1
2	17	11.6	15	12.9	32	12.2
3	12	8.2	11	9.5	23	8.7
4	17	11.6	16	13.8	33	12.5
5	13	8.8	11	9.5	24	9.1
6	14	9.5	14	12.1	28	10.7
7	24	16.3	25	21.5	49	18.6
8	19	12.9	18	15.5	37	14.1
Total	147	100.0	116	100.0	263	100.0

It should be noted that except for group no. 1, post-test groups were similar in size to pre-test groups (Z=1.73, n.s.). Group no. 1, however, was smaller at post-test than at pre-test.

Sample of in-service teachers 1991-2005

The population for this part of the research included all in-service teachers with at least three years experience who had participated in the EMPI programme from 1991-2005. These were 170 teachers, to whom a typed questionnaire was sent by post. 24 responses (14%) were returned unanswered because the teachers were no longer living at the same address. Over 15 years had passed since I had given the first course and this was to be expected. People move and there was no way to attain a new address since contact had been lost with them. 64 (38%) responses were received from teachers, and 82 teachers, 48%, did not respond to the questionnaire.

This response rate is within the acceptable range in the social sciences. Baruch (1999) reported a mean of 55% response rate in a meta-analysis of studies, and found a significant decline with time. Thus, knowing that 14% of the sent questionnaires did not reach their destination, and that years had passed between the course and the arrival of the questionnaire, this response rate, of 44% (out of 146), is likely. On the other hand, although over a decade had passed since the inception of the course, some teachers had gone on pension but still felt a need to answer the questionnaire and describe how the programme had influenced them while they were still teaching in the field.

About half of the 64 participants took the course up to the year 2000 (45.3%), and the rest between 2001 and 2005 (54.7%). Participants in the course had an experience of 4 to 40 years (M=18.57 years, SD=9.81) and taught in a wide variety of levels. 56 participants noted the classes they were teaching or used to teach: 36 taught at elementary school level (64.3% of 56), 27 respondents taught at junior high level (48.2% of 56), and 21 taught at high school level (37.5% of 56). 21 of the teachers taught at two or even all three levels (e.g., elementary and junior high school, or junior and high school). 47 participants were still teaching in the education system (73.4%) at the time they filled out the questionnaire.

Most participants taught in the Jewish system (N=50, 89.3% of 56). Of these three teachers were working in the Arab system as well. An additional six teachers were working in the Arab system only (10.7%). Over a half of the participants taught in the state secular system (N=32, 57.1% of 56), about one fifth in private systems (N=12, 21.4% of 56), and several in the state religious system (N=3, 5.4% of 56). The rest taught in various combinations of these.

Four veteran teachers

Four elementary EFL teachers were chosen to be interviewed and the content of their narrative analysed and compared. The four teachers are females, are over 40 years of age and had a minimum of 17 years of teaching experience in the field. They reflect the continuum of English teachers that exist in Israel and were chosen because of their variety of different backgrounds. Two of the teachers taught in regional schools which served the populations living on kibbutzim or other agricultural settlements. The other two worked in regular city schools with children from an average socio-economic background. The intention of the research was to get a comprehensive picture of the continuum of EFL teachers in the north of Israel.

Two of the teachers (S.F. and J.T.) are native speakers of English. S.F came to Israel at the age of 12 and completed her junior high and high school education in Israel. She then went on to study at the Oranim Teachers' Training College and became a regular elementary school teacher. When her school found themselves without an English teacher she was approached to become an EFL teacher because they knew she was a native speaker of English. From that point on she started taking more hours in English. She then went on to get a B.ED degree in English and her M.A. degree in Education. S.F. is regarded an excellent teacher. She has made sure that she receives all the academic qualifications to promote her professional development. She is an example of one of the best teachers I have ever met.

J.T. qualified with a degree in childhood education in 1978. She immigrated to Israel and studied on an intensive programme for special education. For ten years she worked in a kindergarten for handicapped and mentally retarded children. She received no official

training as an EFL teacher but was requested by the local regional school to join the staff as an English teacher. She accepted the position since she had gained experience teaching Hebrew in a Jewish Day School on a sabbatical in the United States. She used her skills as an educator in L1 but never really received any formal training as an EFL teacher. Later on she went on to get a M.A. degree in English as a second language. J.T. has taken a long way round to finally become an English teacher. Biographical circumstances turned her into an EFL teacher. She is an example of an auto- didactic EFL teacher who has used her intuition to solve many of the problems she faces in the classroom.

The other two teachers (N.B. and G.H.) teach in city schools. The children come from an average socio-economic background. N.B. is Israeli and qualified as an EFL teacher in Israel. G.H. speaks Spanish and originally was trained as an EFL teacher in Argentina. She retrained in Israel when she emigrated and has Israeli certification. Both these teachers hold a B.A. and teaching diploma in EFL.

The total sample of the research thus included 147 students (pre-service and in-service, 116 at post test), 64 in-service teachers, and four veteran teachers.

4.4 Research Methods

The following methods were used to carry out the research.

4.4.1 Knowledge Questionnaire (#1)

The purpose of the knowledge questionnaire (see appendix 2) was twofold: first, to test the knowledge of both teachers and students in order to develop a picture of the standard of content knowledge, and the standard of knowledge related to the structure of written and spoken language which is needed for the instruction of beginning reading, that existed in the field. Second, the purpose was to assess change in knowledge as a result of the EMPI programme.

The questionnaire is based theoretically on Ehri (1991, 1994, 1995, 1998, 1999, 2002, 2005) and Adams (1990, 2003) who emphasize the importance of the application of phonological and orthographic knowledge to the explicit teaching of beginning reading.

In light of these theories, questions in the questionnaire were applied from the Phonics Quiz (Lerner, 1989,) and the Informal Survey of Linguistic Knowledge (Moats, 1994), both of which focus on the structure of written and spoken language structure. The researcher either worded her questions the same way and changed examples or assessed the same concepts and changed the wording once again using her own examples. Once the questionnaire was compiled it was shown to a colleague who is an EFL teacher trainer in the field of LD who looked over the content and made some suggestions. The questionnaire was given to several past students who answered the different sections and gave their opinion of the relevance of the questions and if they had found any ambiguities.

The questionnaire provided data about the basic knowledge of EFL teachers that existed from the outset of the course, and in its end. It lent itself to a deductive analysis as the definition of deductive theory is that it must be "*subjected to empirical scrutiny*" (Bryman, 2004, p. 8).

Moats (1994) had given a similar questionnaire to teachers of reading, language arts and special education in English in L1. She wanted to determine if they had enough knowledge about the structure of written and spoken language so that they would be able to teach basic literacy. The research question in the current research was similar. "*Whatever hypotheses they (scientists) formulate have to be tested empirically so that their explanations have a firm basis in fact " (*Cohen, Manion and Morrisen, 2007, p.5). The rationale was to determine whether the situation for EFL teachers was similar.

The questionnaire was composed of 39 multiple choice questions based on the content knowledge of the English language needed to teach beginning reading. "*Questions can sometimes be employed to 'test' respondents knowledge in an area*" (Bryman 2004, p.151). Only one answer per question was correct. Cohen, Manion and Morrison (2001, p.251) refer to this as "*a single answer mode*". This type of question "*can be quickly coded and quickly aggregated to give frequencies of response*"(Cohen, Manion and Morrison, 2001).

The questionnaire was made up of 39 items, pertaining to seven content areas, and organized in three sections which checked the standard of the content knowledge related to reading and spelling. All questions had forced choice responses, of which one was correct and others were wrong. **Part I** (questions 1-17) checked teacher knowledge of phonics, composed of five areas: concepts of phonics (questions 1-6, 8-12), knowledge of vowels (questions 7, 15), differentiation between syllables (questions 13, 14), phoneme counting (question 16), and syllable counting (question 17). Students were expected to recognize examples of basic terms needed for the teaching of beginning reading. Moats (1994, p.81) refers to it as "The missing foundation in teacher education". Once this knowledge is internalized and understood teachers will be able to teach phonics and deal with the difficulties faced by a wide range of readers particularly those at risk.

<u>The five areas of Part I were:</u>

Concepts of phonics (Questions 1-6 and 8-12)

These questions evaluated knowledge of phonics, and students were asked to recognize examples of basic terms needed for the teaching of beginning reading. For example:

1. A word with a consonant digraph is

a) stare b) blend c) send d) strict **e)** chest

Knowledge of vowels (Questions 7; 15)

The purpose of these two questions was to determine if the respondent could recognize phoneme grapheme correspondences.

For example:

7. If *aik* were a word, the letter *a* would probably sound like the *a* in

a) black b**)** make c) again d) coat e) call

Differentiation between syllables (Questions 13; 14)

The purpose of these two questions was to see if the respondent was able to recognize and differentiate between open and closed syllables.

For example:

13. A word with an open syllable is

a) hike **b)** go c) spend d) butter e) it

Phoneme counting (Question #16)

This question included nine words which had to be broken down into phonemes. The aim was to determine whether teachers of reading had insights into phonemic awareness. If they were unable to carry out this activity they would not be in a position to provide phonemic awareness instruction which is an important prerequisite to reading.

For example:

16. Phoneme Counting

Count the number of speech sounds or phonemes that you perceive in each of the following spoken words. Write the number of phonemes on the line.

drill____**(4)** sing_____**(3)** shook_____**(3)** know_____**(2)**

Syllable counting (Question #17)

This question included six words which had to be broken down into syllables. The aim was to determine knowledge of the concept of syllable division. Syllable conventions are necessary for decoding and spelling words, particularly as the texts being read become more sophisticated. This enables the pupil to read multi-syllabic words fluently. If a teacher lacks this knowledge, he/she will not be able to explain how to decode longer words. The pupil will have difficulties decoding and spelling words of two or more syllables and good comprehension will not be achieved.

For example:

17. Syllable Counting

Count the number of syllables that you perceive in each of the following words.

lighten_____**(2)** shirt____**(1)** banana _____**(3)** international___**(5)**

Part II of the questionnaire deals with the category of **spelling rules (orthography),** and contains four multiple choice questions (Part II: questions 1-4). Each question defines a basic spelling rule. The student has to identify an example of the rule from the four possibilities which are provided.

For example:

2. Which word is an example of the spelling rule: when two vowels are written together the long sound of the first vowel is the only sound pronounced. (When two vowels go walking the first does the talking.)

a) boil b) slit **c)** fail d) dame e) mouse

Part III deals with the category of **reading terminology,** and contains five multiple choice questions (Part III: questions 1-5) related to the basic terminology that is connected to the teaching of reading. This is the type of terminology a teacher should be familiar with in order to teach.

For example:

2. Phonics is the application of _____to the teaching of reading.

a) morphology

b) phonology

c) syntax

d) whole language

As mentioned before, each item had several possible answers, of which one was correct, and the others were incorrect. Coding of the items was: 1= correct answer, 0= incorrect answer. As the number of items per content areas vary the score of each content areas was transformed to a scale of 0-100, reflecting a grade. A total knowledge score of 0-100 was constructed as well.

The internal consistency of the participants' responses within each content areas was examined with Cronbach's α (for content areas with at least three items), or a spearman correlation coefficient (for content areas with two items). These values are presented in Table 2.

Table 2

Internal consistencies for the knowledge questionnaire (N=263 questionnaires)

Content areas	**Total**	**Pre-test (N=141-147)**	**Post-test (N=116)**
Concepts of phonics	.67	.47	.62
Knowledge of vowels	.01	.05	-.07
Differentiation between syllables	.37***	.28***	.45***
Phoneme counting	.66	.64	.63
Syllable counting	.61	.63	.57
Spelling rules	.33	.15	.48
Terminology	.59	.57	.52
Total knowledge score	.82	.74	.81

*p<.05, **p<.01, ***p<.001

Note: Knowledge of vowels, and differentiation between syllables contain two items each, and thus spearman correlation coefficient was used.

The table shows that some internal consistencies are reasonable (i.e., α is greater than .60, or the correlation is greater than .30), yet others are quite low. The internal consistency of the total knowledge is good, showing that, in general, participants who had knowledge about reading and spelling showed it across the content areas and the items. Their knowledge or lack of it was consistent across the questionnaire. At pre-test, internal consistency was reasonable for phoneme counting and syllable counting. That is, in these areas the participants tended to either know or not know the content area, while in other areas their knowledge did not exhibit a pattern (i.e., they knew some and did not know some). At post-test, internal consistency was reasonable for concepts of phonics, differentiation between syllables and phoneme counting. These consistencies have no implications regarding the extent of the participants' knowledge. They do mean, however, that it tended to be inconsistent within content areas.

4.4.2 Process of PD Questionnaire (#2)

The aim of the Process of PD questionnaire #2 (see appendix 3) in this research was to determine the impact that the EMPI programme had left on the professional development of the teachers. The questionnaire reflects areas of impact found in the models described by Guskey (1986, 2002), Ingvarson, Meiers and Beavis (2005); Meiers and Ingvarson (2005) and Garet, et al. (2008).

The Process of PD questionnaire is a self report questionnaire**.** The self report is a widely used approach to measure perceptions, attitudes and beliefs. "I*t is the most direct approach to ask people what their attitudes are*" (Nunnally, 1978, p.591). "*The respondents answer the questions by completing questionnaires themselves*" (Bryman, 2004, p.132). The self-report questionnaire lends itself to a statistical analysis.

There are both advantages and disadvantages to the self report.

The advantages are the following:

- It is easy to administer. The respondent provides a self description of his/hers perceptions, attitudes or beliefs.

- It is easy to process. Answers are written down and data is readily available.

- People express their own opinions and they are the best source. This makes "*subjects feel more confident about their own responses*" (Nunnally, 1978, p.591).

- The self report is the only way to obtain perceptions that influence everyday practices.

On the other hand, there are also disadvantages that should be taken into consideration:

- The respondent may feel pressure to provide what he or she thinks are the desired answers. That is, social desirability may cause him/her to note things that were not intentional but rather expected.

- The interpretation of the narrative may not always reflect what the respondent felt deep down.

- Self reports are limited to "*what individuals know about their attitudes and what they are willing to relate*" (Nunnally, 1978, p.591).

The Process of PD questionnaire included questions with several types of response scales. Some had a Likert type scale, ranging for example, from not at all (1) to very much (4). Others had a list of possible responses, and the participant had to mark all that applied to him/her. Some had yes/no answers, and others were open ended questions. The open ended questions enabled the teachers to provide their own personal responses without any pressure from an interviewer. They were subjective and the need to elaborate on an answer was left to the discretion of the respondent.

The Process of PD questionnaire focuses on six main categories.

Incentives to join the course: – Question 1

The purpose of this question was to determine the reasons for taking the course.

It asked what prompted their decision. Ten possibilities were provided.

For example;

1. Why did you decide to take the course "Teaching English to Children with Learning Disabilities"? (Check all answers that apply √).

Some possible answers were:

a. Because you felt you needed additional knowledge and ideas to improve your teaching in the regular classroom.

b. Because you were on Sabbatical and needed to take an extra course.

c. Because you were interested in teaching children with dyslexic characteristics how to read.

Change in knowledge: - Questions 2, 3, 7

The purpose of these questions was to determine the perceptions of the teachers regarding their increase in knowledge related to the teaching of beginning reading.

For example:

3. Do you think the course has enhanced your knowledge of how to teach reading more efficiently? (Circle the correct answer).

4	3	2	1
Very much	to some degree	very little	not at all

Change in practices: – Questions 9 – 15

The purpose of these questions was to determine how the teachers perceived their teaching practices as a result of the EMPI programme.

For example:

9. Do you think the course has affected the way you teach beginning reading?

4	3	2	1
Very much	to some degree	very little	not at all

If you answer yes please elaborate: _____

_____

If you answer no explain why: _____

_____

Student outcomes: This question was not asked directly because student outcomes are better tested directly. However, student attainment was reported by the respondents in the content of the open ended questions.

Change in beliefs: - Question 4

The purpose of this question was to find out if the respondents' beliefs towards the teaching of reading had changed. It asked if after completing the course their underlying beliefs about reading instruction were different.

4. Have your beliefs about the teaching of reading changed since you completed the course?

4	3	2	1
Very much	to some degree	very little	not at all

Elaborate_____

_____

Teachers' PD: - Questions 5,6,8,16 - 19

The purpose of these questions was to get deeper insights into the PD of the respondents and how they were reflected in their day to day teaching.

For example:

19. Since you completed the course:

a. do you teach students with dyslexic characteristics in a private capacity? Yes / No

b. do you work in a municipal or private learning centre? Yes / No

c. do you teach a course related to dyslexia? Yes / No

d. do you teach students with dyslexic characteristics at the junior high school or high school level? Yes / No

Elaborate_____

_____

Finally, the respondents were asked to provide basic personal details. These included details about the different teaching sectors (Jewish/Arab; religious /non religious; private/ government school) as well as the educational framework/system.

At the end of the questionnaire an additional open ended question was provided. Teachers were asked to express feelings, ideas and criticism of the course in retrospect.

4.4.3 Unstructured Interviews

Punch (1998) explained that the unstructured interview was a means of understanding the complexities of human behaviour without placing a priori categorization which could impose limits on the field of inquiry. Interviews allow participants "*…to discuss their interpretations of the world in which they live, and to express how they regard the situations from their own point of view*" (Cohen, Manion and Morrison, 2001, p.267). "*…the unstructured interview is an open situation having greater flexibility and*

freedom" (Cohen, Manion and Morrison, 2007, p.355). "T*he unstructured interview is a powerful research tool, widely used in social research and other fields, and capable of producing rich and valuable data*" (Punch, 2005, p.172). It was used in the current research in light of the post positivistic approach.

Unstructured interviews reflect the subjective responses of the interviewees and enable them to generate personal narratives without imposed pre-suppositions. The constructivist narrative approach is based on the assumption that complex and rich life experiences are represented better through stories and narratives (Lieblich, Tuval-Mashiach and Zilber, 1998). The narrative way of thinking is loaded with values. It tends to revolve around the general question of the actual significance of the experience (Bruner, 1985). Further, unstructured interviewing tends to be similar to an intimate or prolonged conversation (Burgess, 1984). Thus, unstructured interviews were incorporated rather than, for example, observations, because it was important to obtain a comprehensive picture of the feelings and experiences of the teachers.

The final stage of the research included four unstructured interviews the purpose of which was to identify additional aspects of PD, beyond those asked about in the questionnaire. The unstructured interviews were carried out after several years had lapsed since the completion of the original course. The teachers had been working for several years in the field. In the interim, they had applied ideas and techniques which the EMPI course had given them. They were able to reflect on the application and then make changes in what they had built. The effects of the course had embedded themselves and were reflected in their narrative.

In the unstructured interviews the teachers related to their teaching story and the researcher was able to get deeper insights into their perceptions, beliefs and practices. They were asked a single question- to tell their "teaching story" in the form of a narrative and responded freely with very little intervention or prompting from the researcher.

Bryman (2004) says that the interviewer may ask one question and then allow the interviewee to respond as s/he sees fit. "*Please could you tell me your teaching story and how the course I taught has affected you?*" The focus was on the informants' subjective

perception of themselves, as well as the environment and their personal experiences. The narrative flowed naturally and the researcher listened attentively adding one or two questions at the end such as "*Why do you think it is so important to teach reading*?" and "*Since the completion of the course what has happened to you professionally?*" According to Gudmundsdottir (1991), stories are part of our identity and our culture. We create stories about ourselves which we pass on to our friends. This personal narrative enables us to understand who we are and where we are going in our lives. In the current research, this narrative highlighted the process of professional development of the teacher- the storyteller.

4.5 Reliability, Validity and Generalisability

Reliability of questionnaires and unstructured interviews

"*The role of reliability is to minimize the errors and biases in a study*" (Yin, 2003, p.37). Reliability is achieved when there is a "*consistency of a measure of a concept*" (Bryman, 2004, p.71). The Knowledge Questionnaire (#1) in the current research thus seem to be reliable as the participants provided exact answers to clearly defined questions. Answers were either right or wrong and there was no place for subjective answers. Similar results are to be expected in a test-retest examination, had I asked these questions prior to or post programme, after a lapse of several weeks. Further, internal consistency was measured between items composing each content dimension. A statistical analysis could be carried out on the responses that were provided.

In the Process of PD Questionnaire (#2) subjective responses determined the outcomes to the questions. There was no right or wrong answer and the respondent was free to express his/her own opinion. Open ended questions "*invite an honest personal comment from the respondent in addition to ticking numbers or boxes. …provide 'gems' of information… and puts the responsibility for the ownership of the data much more firmly into the respondent's hands*" (Cohen, Manion and Morrison, 2001, p.255). "*…qualitative findings tend to be orientated to the contextual uniqueness and significance of the social world being studied*" (Bryman, 2004, p.275).

Following this idea, reliability of this questionnaire, i.e. its 'dependability' (Guba and Lincoln, 1989) was achieved by adhering to the content or opinions expressed by the teachers in the open ended questions. Furthermore, there was an adherence to the context of the teachers' professional world of teaching.

The interviews were unstructured and the narratives were spontaneous with the underpinnings of the teacher interviewees' own feelings and opinions. The narrative is the subjective story of their teaching experience and their own personal development. '*Dependability'* (Guba and Lincoln, 1994; Lincoln and Guba, 1985) has been achieved by remaining truthful to the teachers' world view and understandings, as well as to their professional context as they had described it.

Validity of questionnaires and unstructured interviews

"*Validity is the touchstone of educational research*" and is concerned with "*the integrity of the conclusions that can be generated from a piece of research*" (Bryman, 2004, p.280).

Internal validity "*is concerned with the question of whether a relationship between two or more variables holds water"* (Bryman, 2004, p.29). The Knowledge Questionnaire (#1) was administered at the beginning and end of the course, and has a pre and a post test. The supposition is that if there is an improvement it is a result of the instruction received throughout the academic year. Veteran teachers who had used a different approach in the past did not change their approach before participation in this course, and were unlikely to change it on their own, without an intervention. Any noted improvement would most likely be a result of the course. Thus, the Knowledge Questionnaire (#1) seems to have internal validity.

The process of PD Questionnaire (#2) also seems to have internal validity. Clear direct questions were asked about incentives, knowledge, practices, beliefs, and professional development. Due to the fact that the teachers could answer anonymously, it can be presumed that the responses represent their sincere opinions and beliefs. Further, 'credibility' (Lincoln and Guba, 1985; Guba and Lincoln, 1994) seems to have been

achieved as the analysis of the open ended questions focused on reflecting the multiple realities of each phenomenon accurately, so that the results would be credible or believable from the perspective of the teachers.

In the four unstructured interviews personal narrative provides truthful and accurate data which enables the participants to provide details about the topics discussed and to discuss life experiences in their own words. The unstructured interviews seem to have internal validity i.e. credibility (Lincoln and Guba, 1985; Guba and Lincoln, 1994). In the analysis of the interviews the process and the responses of the interviewees are seen through their eyes and reflect their personal opinions and convictions.

External validity, in positivistic terms, refers to the degree that a study that has been carried out can be replicated and similar results received. This is not easy to carry out in qualitative research, when case studies and small samples are being used (LeCompte and Goetz, 1982). Thus, in post-positivistic terms, external validity is defined as 'transferability', the degree to which the results of qualitative research can be transferred to other contexts or settings (Lincoln and Guba, 1985; Guba and Lincoln, 1994). The current research has used a large sample of informants, who participated in the programme for almost two decades. The knowledge questionnaire has 140 (pre study) and 116 (post study) respondents and the process of PD questionnaire has 64 responses that were received from participants in past cohorts. The integration of both conditions, sample size and the use of cohorts, allows us to assume a certain extent of external validity. The results provided by the Knowledge Questionnaire are replicable, both pre and post programme. The results provided by the Process of PD Questionnaire and the interviews are transferable to similar contexts or settings.

Generalizability

In positivistic research generalizability is the ability to say that the researcher's "*findings can be generalized beyond the confines of the particular context in which the research was conducted* " (Bryman, 2004, p.76). It is likely that the results of the Knowledge Questionnaire (#1) are generalizable to EFL teachers across Israel, those who have participated in the EMPI programme and those who have not. Their basic training as EFL

teachers is similar, and the content knowledge of the programme is consistent. The question of cross-cultural generalizability is open to future research.

The results of the Process of PD Questionnaire (#2) may be transferred to other teachers who have participated in the programme. The questionnaire may be administered to other groups of teachers who have participated in the programme or who will study in it in the future, and similar results are expected. Teachers are still facing difficulties in the field and the EMPI programme has practical solutions which can be adapted.

The four unstructured interviews follow the criteria of 'transferability' and 'confirmability'. As mentioned above, Lincoln and Guba (1985) and Guba and Lincoln (1994) provide alternative criteria for judging qualitative research. Transferability and confirmability are two of them. Transferability is the degree that the outcomes of qualitative research can be generalized and transferred to other milieu. The qualitative researcher is responsible for transferability. Therefore, the research context must be described thoroughly as well as the central assumptions of the research. The person who wants to make the 'transfer' to another context must take the responsibility of how sensible the transfer is. When the results and interpretations of a study can be confirmed or corroborated usually by a different researcher confirmability is achieved (Lincoln and Guba, 1985; Guba and Lincoln, 1989). In the current research the professional context of EFL teachers in Israel has been described thoroughly. The contents of the EMPI programme have been detailed as well, and so has the process of the research. These provide the basis for 'transferability' and 'confirmability'.

4.6 The Researcher's Role and Level of Involvement

The researcher is this study took on a dual role as both teacher of the programme and researcher of the effectiveness of the programme. Due to the fact that the mixed methods approach was used the role and level of involvement changed depending on which method was applied. According to the positivistic paradigm the researcher must be objective when collecting data and the analysis will be quantitative (Cohen, Manion and Morrison, 2001). Questionnaire #1 was administered to students or teachers participating at the outset of a course in order to determine the level of content knowledge needed for

the teaching of beginning reading. It was followed up with a post test at the end. The researcher taught the programme as planned and no changes were made throughout the course even though she was aware that her instruction could alter the outcome of the post test significantly. The needs of the students were more important than the research. Data was analysed statistically after the completion of the course so that the results did not affect or alter the methods of teaching. Data was seen indifferently and independently. In the case of self completion questionnaire (Questionnaire #2) the researcher was absent thereby reducing the effect on the respondents (Bryman, 2004). They were free to answer and to return the questionnaire. The researcher interviewed the four teachers herself so there was personal contact between the two parties and additional information was uncovered. No hypothesis was made previously and no theory was tested. The intention was to get a deeper understanding of the participant's world. In order to achieve this aim it is necessary for researchers to approach it via the personal perspective of the participant and on his or her terms (Robertson and Boyle, 1984; Denzin, 1989). Therefore, the interviewees spoke freely and once or twice a question was added. The researcher did not pass judgment or give advice to the respondents as was pointed out by Denzin (1989). The needs of the interviewees always came first, and the researcher, although involved in the process, left the lead to the interviewees.

4.7 Research Procedure

The research procedure was carried out in three parts.

a). The knowledge questionnaire (#1) was administered to the full spectrum of EFL teachers ranging from pre-service students through to veteran in-service teachers who were participating in the programme. It was administered as pre-test and as post-test in order to determine the level of the participants' content knowledge related to the teaching of beginning reading.

The knowledge questionnaire (#1) was handed out at the beginning of the academic year to the students and teachers as a pre-test. The questionnaires were handed out in class and answered anonymously. The following procedure was carried out.

"*Desks were spaced out as much as possible and in most cases questionnaires were completed in exam-like conditions, with talking strongly discouraged, and little or no over –looking of others' questionnaires*" (Smith and McVie, 2003, p.183).

A post test was administered at the end of the year using the same questionnaire.

b). The process of PD questionnaire (#2) was sent by post to all the in- service teachers who had participated in the course from 1991-2005. As mentioned above, it was sent to all 170 in-service teachers with at least three years experience who had participated in the EMPI programme from 1991. 24 responses (14%) were returned unanswered due to an address change. 64 (38%) responses were received from teachers, and 82 teachers, 48%, did not respond to the questionnaire.

c). Unstructured interviews were carried out with four veteran teachers who had been active participants in the course. They were chosen because they represented two different types of schools. Two of the teachers taught in regular city schools and the other two taught in regional schools that serve the population that live on kibbutzim or other agricultural frameworks. They all had a minimum of ten year experience teaching EFL at the elementary school level and were all experienced reading teachers. The researcher had got to know them well during the EMPI course and knew they were serious teachers. Each teacher was contacted by phone and a meeting was set up at their place of choice. Every teacher underwent an unstructured interview with almost no intervention from the researcher other than an opening question asking them to relate to their teaching story and an additional question here and there. The interviews lasted about two hours each. They were taped, and the tape scripts were later typed up.

4.8 Methods of Analysis

Quantitative analysis

The Knowledge Questionnaire (#1) was analysed by means of quantitative statistical analysis comparing pre and post test knowledge. First, internal consistencies for the items composing the various content areas were calculated with Cronbach's alpha (α) for pre test, post test and total knowledge score beyond time. Multivariate analysis of variance

(MANOVA) was used to assess pre-test group differences in the content areas of knowledge and a univariate analysis of variance (ANOVA) was used for the total knowledge score. Chi square tests were used to examine pre-test group differences in the single items of knowledge. Another multivariate analysis of variance (MANOVA) was used to test pre-post differences in the content areas of knowledge, and a univariate analysis of variance (ANOVA) was used for the total knowledge score. Further, knowledge in the different content areas was rank ordered with two repeated measures MANOVAs- for pre and post tests, with post hoc paired comparisons. Pre-post change in the single items was examined with Z tests (Mann-Whitney U test), that are appropriate for dichotomous variables. Finally, Pearson correlations were computed among the scores of the content areas of knowledge, at pre and at post test.

Process of PD Questionnaire: background demographic data was analysed with descriptive statistics. Frequencies and percentages were used to describe nominal and ordinal variables (such as school level being taught at, or Jewish vs. Arab system), while means and standard deviations were used to describe continuous variables (such as years of work experience).

Questions with Likert type scales, a list of possible responses, or yes/no answers were analysed with descriptive statistics, using frequencies and percentages. The responses to open ended questions were content analysed as detailed below.

The answers to the open ended questions in the Process of PD Questionnaire, and the typed up narrative of the unstructured interviews were content analysed.

Content analysis

Content analysis is a methodology in the social sciences for studying the content of any human communication. It is most commonly used by researchers in the social sciences to analyse recorded transcripts of interviews with participants (Babbie, 2000) but can be used to analyse any text document (Trochim and Donnelly, 2007). In the current study it was mainly used to analyse the content of the teachers' responses to the open ended questions in the ‘Process of PD’ questionnaire.

Content analysis can be quantitative, qualitative or both. Typically, the major purpose is to identify patterns in text, which is a 'Thematic analysis of text' (Trochim and Donnelly, 2007). In thematic analysis the intention is to categorize the "*phenomenon or phenomena of interest*" (Bryman, 2004, p.188). It involves the identification of themes or major ideas in a document or set of documents. In the current research thematic content analysis was used to identify themes of professional development that the teachers wrote in response to the open ended questions. It was conducted both qualitatively – in a search for distinct contents, and quantitatively – by counting the number of teachers who related to each theme.

Content analysis is a systematic method (Bryman, 2004) that can be purely inductive, but that can also seek to analyse text "*in terms of predetermined categories*" (Bryman, 2004, p.181). It is purely inductive in exploratory research, which was not the current case. In the current research, the research questions and the underlying conceptual model guided the content analysis. That is, the broad categories of professional development were predetermined, and the teachers' written responses were sorted to match them. However, content analysis was also inductive, in terms of the sub-categories. The latter emerged from the text data.

At first, the teachers' responses were sorted according to their manifest content (Babbie, 2000) regarding the broad categories of professional development. They were sorted across questions in the questionnaire, as the teachers related to certain aspects of professional development in response to various questions. Looking for the sub-categories within each broad, theory based category, often necessitated using a more interpretative approach to uncover the latent content that existed below the surface (Babbie, 2000; Bryman, 2004).

The process of analysis was systematic (Krippendorff, 2004). Ten questionnaires were analysed at a time, adding some sub-categories, changing the titles of some, and combining others. Then, questionnaires that had been analysed previously, were re-analysed according to the modified rules. This process was iterative until no further changes were required in the sub-categories (Crabtree and Miller, 1999). In the process,

sub-categories were added, others with very few quotes were merged, and broad one were divided. At the end of the process 'trustworthiness' of the categories has been achieved (Guba and Lincoln, 1994). The categories and sub-categories were both theory and data based.

Once the analysis of the responses to questionnaires culminated, categories and sub-categories of professional development were available. As it may be recalled the purpose of the four unstructured interviews was to add information about professional development, beyond that achieved in the questionnaires. Thus, at this point, the typed interviews were read and re-read in light of the existing categories and sub-categories of professional development. New sub-categories were searched for. The interviews served to validate the categories that had already been developed, and indeed, most of them were apparent. In addition, one new sub-category emerged.

In conclusion, the process of the analysis of the qualitative data and the formulation of the categories was a deductive-inductive process. It was based on the three theories of professional development developed by Guskey (1986, 2002), Ingvarson, Meiers and Beavis (2005); Meiers and Ingvarson (2005) and Garet, et al. (2008), yet novel sub-categories emerged from the data. The analysis was in line with the conceptual framework of the research.

4.9 Ethical Considerations

In Lincoln's opinion (1995) ethical standards should be seen as fundamental quality criteria to judge and evaluate any social science study. According to Cohen, Manion and Morrison (2001), it is the responsibility of the researcher to abide by professional ethical codes and to address them at the initial stages of the research and acknowledge them during the process. If ethical standards are not adhered to the study cannot be considered to be a good one "*even when the other methodological quality criteria have been met in a satisfactory manner*" (Peled and Leichtentritt, 2002, p.148).

The current research was conducted according to Anglia Ruskin University guidelines (Anglia Ruskin University, 2008) and the following ethical considerations were taken into consideration.

Knowledge Questionnaire (#1)

- Before the Knowledge Questionnaire (#1) was administered permission was given by the participants to use the information for research purposes. They were asked to fill in a Form of Consent (see appendix 5).

- Due to the fact that both pre –service and in-service teachers were asked to fill in the questionnaire they were assured that their responses would not affect their final grade for the course.

- The researcher made it clear that it was not compulsory to fill in the questionnaire and submit it on completion.

- Confidentiality would be adhered to and their responses would only be used for the research connected to this thesis.

Process of PD Questionnaire (#2)

- A letter of consent asking for permission to use the responses to the questionnaire only for research purposes was attached to the questionnaire which was sent by post (see appendix 6).

- The researcher provided a self addressed envelope so that the respondents could return the questionnaires by return of post if they chose to fill them in.

- The researcher provided the option to remain anonymous for both questionnaires.

Unstructured interviews

- Confidentiality was assured.
- The interview was carried out as a free interview and before the commencement the interviewee was informed that she could stop at any point.
- No pressure was applied if the interviewee refrained from answering questions which were posed at the end.

All data that were collected were securely stored by the researcher, and did not serve for any other purpose but the research.

4.10 Summary

This research was conducted with a mixed methods design. It was post positivistic in character and a cohort longitudinal approach was applied. Pre-service and in-service EFL teachers served as the research population. In addition 4 veteran teachers were interviewed. Two questionnaires were used. One examined change in knowledge and the other asked the participants' perceptions of their PD process. Data were analysed by means of both qualitative and quantitative methods.

In the next chapter the findings of this research are described.

5. Research Findings

This chapter describes the findings of the research in the order of the research questions. Qualitative and quantitative data are integrated according to the applicability of the research questions.

5.1 Introduction

EFL teachers who are not achieving successful student outcomes tend to feel negative self efficacy. Consequently, they look for solutions to their problems and turn to the framework of PD. In Israel this was the case for EFL reading teachers who failed to bring their students to the required level.

They looked for alternative ways to improve their teaching. The content of the EMPI programme provided them with both the theoretical and practical knowledge which enabled them to teach differently. Once they saw changes in student outcomes their beliefs and attitudes about teaching beginning reading in English changed. This was a process of professional development that affected their personal professional growth in addition to influencing their teaching in the regular classroom. Above all most of the students learnt to read and these improvements left the teachers with a positive sense of self efficacy.

This process was intuitively described by the participating teachers, and is partly conceptualized by Guskey (1986, 2002) and Ingvarson, Meiers and Beavis (2005) and Garet, et al. (2008). It has been conceptualized for the purpose of this research as composed of:

Negative sense of self efficacy → knowledge acquisition → change in teaching practices → changed student outcomes → change in teachers' beliefs and attitudes → individual professional development and change to a sense of positive self efficacy. (For more information see Chapter 3, Figure 4.)

As it may be recalled the knowledge questionnaires for this study were collected pre and post each programme for four years. The self report questionnaire was distributed to teachers who participated in the programme between 1991 and 2005, and four un-structured interviews were conducted.

5.2 Research Question 1

The results of the first research question showed that negative self efficacy propelled the process of PD. As it may be recalled the first research question dealt with the incentives of the teachers to join the programme as a result of feeling a lack of success. This section presents the participating teachers' responses to the direct question about the reasons that led them to attend the programme, and then describes the categories of incentives as they emerged from responses to the open questions: teachers' negative sense of self efficacy, the reality that the teachers faced in the field, the inability of some teachers to apply what they believed in. Another category that is described here – teacher commitment - emerged from the open interviews. It should be noted that each of the closed questions in the questionnaire was accompanied with an open comment asking the teachers to elaborate. This was an unstructured request and thus the number of teachers who responded to each category is often low. However, their responses were found to support each other and to be in line with the quantitative results derived from the closed questions.

5.2.1 Reasons for Participating in the Programme

As it may be recalled, the participating teachers were asked to note, out of a list of reasons, the ones that led each of them to take the programme. Table 3 describes, in descending order, the reasons that the participants noted for taking the programme (each participant marked several reasons). Results in the table show that most of the teachers' reasons reflect a sense of negative self efficacy and a desire to participate in a process of PD in order to see successful student outcomes.

Table 3

Reasons noted for taking the remedial programme (N=64)

	N	%
3.Interested in teaching children with dyslexic characteristics	55	85.9
8.Own desire for professional growth	48	75.0
5.Desired the pupils to succeed	46	71.9
9.To change teaching environment	43	67.2
10.Used methods were unsatisfactory	41	64.1
1.Needed knowledge for regular classroom	39	60.9
6.For personal satisfaction	30	46.9
4.Help own child	15	23.4
7.To be considered a good teacher by others	9	14.1
2.Programme on Sabbatical	8	12.5

The table shows that the main reasons for participating in the programme were related to professional development and a sense of negative self-efficacy. 86% of the participating teachers noted that they enrolled in the programme because they were interested in teaching children with dyslexia, 75% noted that their aim was professional growth, and 72% wrote that they were searching for ways to help their pupils succeed. Further, 67% of the participating teachers marked that they wanted to change the teaching environment, and 64% said the methods they were using were unsatisfactory. 61% of them wrote that they were looking for knowledge to work with regular classrooms because of the high rate of failure.

A meaningfully lower percent of teachers took the programme for personal satisfaction (47%), in order to help their own child (23%), in order to be considered a good teacher by others (14%), or just because they were on Sabbatical (13%).

Indeed, the ranking of the reasons for taking the programme was significant: $\chi^2(9)=180.77$, $p<.001$ (Friedman Test), showing that the frequency of some reasons was significantly higher than the frequency of others. An examination of the differences showed that the wish to teach children with dyslexia (#3) was a significantly more frequent reason for taking the programme than all other reasons, and that the rest of the reasons about professional development (#8, 5, 9, 10, 1) were in second place. Personal satisfaction was ranked in third place (#6), and lowest were the three reasons dealing with own child, social status, and Sabbatical (#4, 7, 2).

It can be concluded that in most cases the teachers' desire to undergo a process of PD was initiated by both lack of success and the sense of negative self efficacy they experienced. That is, the teachers chose to join the programme mainly for professional reasons, as their central wish was to improve their teaching methods in the wish to observe greater success rates among the students.

5.2.2 Negative Sense of Self Efficacy

Fourteen teachers described a negative sense of self efficacy that they had prior to participating in the programme. They felt that they lacked the necessary tools and methods of instruction to teach beginning reading. They were unable to cope with the needs of children with dyslexic characteristics or readers at risk, and felt frustrated that they were failing to teach them to read. This negative feeling motivated them to search for professional solutions. They made a personal decision to find relevant solutions because no official body was aware of the extremely difficult situation in the field.

Because my students were unsuccessful I wanted to be able to learn more. To figure out my own techniques and understand them better and most important of all to help my pupils scudded in a foreign language with the appropriate tools . Q#5

I felt that I was not giving the pupils with dyslexic characteristics in my classes what they needed to succeed, because the tools to do so were unknown to me. Q#3

I took the programme when I taught in a very difficult school I had many non readers in each class. I wanted to get the tools to cope with the situation. Q#29

From the outset two teachers (#4, #46) felt that they had received inadequate training in the teaching of beginning reading and dyslexia. They came into the field ill equipped to face the reality that existed.

I felt that I had been given absolutely NO instruction throughout my four year BA programme at college that could help me teach reading let alone reading to the kids with dyslexia. (Q#4)

I needed some effective new tools for assessing and teaching students with dyslexic characteristics, especially false beginners. Q#46.

Three teachers (#11, #37, #40) expressed their frustration with the situation.

I personally got very frustrated (#11).

I felt frustrated with the work I was doing in the regular classroom (Q#37).

I felt I was not getting to them (my pupils with dyslexic characteristics). Q #40

One teacher (#16) was convinced that there was not much to be done about altering the situation and left the teaching system.

Personally I did not believe the there was anything that could help them. (Q#16)

Another teacher (# 26) expressed the need to bring about improved student attainment even though she was not very successful at the time.

I was working with pupils with dyslexic characteristics in an elementary school and felt something had to be changed to improve their chances of being successful. (Q#26.)

That is, the teachers expressed negative self efficacy when relating to their situation prior to participating in the programme. They lacked the basic understanding and practical tools needed to teach beginning reading and deal with at risk readers. This heightened their frustration because they were unable to obtain successful student outcomes. It led them to look for alternative solutions in the form of the process of PD.

5.2.3 Picture of Existing System – A Reflection of the Reality in the Field

The teachers were asked about their approach to teaching beginning literacy prior to participating in the programme. Their responses are described in Table 4.

Table 4

Approach to teaching beginning literacy prior to participation in the programme (N=64)

	N	**%**
Phonics and whole language	34	53.1
Phonics	10	15.6
Whole language	6	9.4
None	14	21.9

The table shows that about half of the teachers (N=34, 53%) noted that they were using both phonics and whole language prior to taking the programme. Another 16% of the teachers were using phonics, and 9% were using whole language. About one fifth of the teachers (N=14, 22%) admitted to not using any of these methods. That is, about one fifth of the teachers were teaching English intuitively without a pre defined approach, and another one tenth was using the whole language approach solely. In other words, a third of the teachers were working in manners that have proven as failing, and indeed were unsatisfied with the results and experienced negative self efficacy. The half of the teachers who were using both phonics and whole language chose to participate in the PD programme to improve their teaching.

In their responses to the open questions ten of these teachers described the reality they faced and the difficulties they were expected to deal with in the field. The main difficulty was that students were not able to read properly. The teachers were under pressure to produce good results but felt they were not adequately equipped to deal with the problems in the field. The responsibility for solving problems was left to them and the Ministry of Education did not provide solutions. This sense of personal responsibility is

one of the reasons for joining the programme in an attempt to find solutions and overcome their feelings of negative self efficacy.

Teaching beginning reading is an important issue which isn't dealt with seriously enough in our present school system. (Q#33)

The text books are not geared to teach beginning reading and the pupils do not attain an appropriate reading level within a year's time. This problem perpetuates itself. The Ministry of Education does not encourage or support the extra effort needed to get the job done. (Q#26)

Elementary school teachers do none of the things the programme teaches. (Q#25)

Six of these teachers (#12, #16, #25, #26, #47, #53) commented on the reality they faced before taking the programme. They were teaching according to a whole language approach in elementary school. The student outcomes were not good and far too many ‘non readers’ entered junior high and high school. High school teachers who had never been trained to teach beginning reading were forced to contend with excessive numbers of students who had not attained the expected level of reading in English over the years.

Before participating in the programme I adopted the whole language approach as it seemed to be less threatening, as well as easier to teach in the classroom. (Q#53)

During my pre-service training I wasn’t taught to teach beginning reading. I wasn't qualified to teach reading. I was taught to teach already reading pupils in high school and junior high and I felt it was necessary for me to learn to teach basic reading skills. (Q#12)

I haven’t ever taught reading. In the past I thought that high school kids "knew it all". I have found out that elementary school teachers teach nothing of the basics! Kids get 10 (full marks) in elementary school but fail in high school. (Q#25)

Three teachers (#25, #58, #59) expressed their opinion about coping with specific difficulties related to weak readers. There was a lack of hours for expert tuition.

I don't have beginners and in a class of 30 kids I can't help those who can't read unless they are given extra hours. (Q#25)

One teacher (#58) felt that the 'whole language' approach simply frustrated the learner with dyslexic characteristics instead of enabling him/her to learn.

The whole language approach only frustrates pupils with learning difficulties. (Q#58)

Another teacher (#59) expressed strong criticism against her school, claiming that the treatment of weak learners was not professional.

I felt my school wasn't treating weak learners in a professional way. It was babysitting rather than teaching. (Q#59)

In sum, the teachers expressed the view that the teaching of beginning reading was not being carried out properly. The whole language approach was the means of instruction and older students were not reading at the expected level. The system was unable to meet the needs of the at risk reader professionally and teachers lacked the necessary means to change the reality, which affected their self efficacy.

5.2.4 Picture of Existing System - Inability to Apply What the Teacher Believes In

Several teachers had some knowledge of phonics, yet due to system pressures they were unable to apply it. Three teachers expressed this sense of inability and described the requirements of the education system which pressured them into teaching contrary to their own personal feelings, leaving them with frustration and a sense of inadequacy.

One teacher (#22) felt that teachers were expected to achieve too much in a short span of time. Learning to read English (L1) is a process that takes three years yet there was pressure to accomplish the same outcome in EFL within a year.

In the USA teachers teach reading for three years. In Israel, as elementary teachers we are supposed to teach all the letters in three months. (From September till December) and reading from December till Passover (April). Is it possible? (Q #22)

Another teacher (#17) reported that she knew that the phonics approach should be used but was pressured to apply failing teaching practices.

I knew I had to be teaching phonics, but we (teachers) were being pressured by the Inspectorate (Ministry of Education) and by book editors to teach whole language (Q#17)

Yet another teacher (#37) started with a whole language approach but sensed that she wanted, or better, needed, to incorporate phonics as well.

I started off with the whole language approach but I always felt the need to teach phonics too. (Q#37)

In sum, teachers reported that the requirements of the system pressured them into using ineffective practices, despite their knowledge and desire to work differently.

5.2.5 Teacher Commitment

Teacher commitment served as an additional impetus for teachers to turn to the process of PD in order to find solutions to their difficulties in the field.

This category appeared in four of the teachers' responses to the open ended questions in the questionnaires, and was very explicit in the four unstructured interviews. The teachers expressed feelings of responsibility and commitment towards their students. They felt that it was important to teach students who needed them. They took the success and interests of their students with dyslexic characteristics to heart and regarded the academic success of these students as an integral part of their professional commitment.

I teach kids with all my heart. (Q#45)

It breaks my heart to see weak pupils who need extra help and can’t always get it. But I am fighting for them. (Q#63)

One teacher (#57) felt guilty because before taking the programme she was failing to teach the students properly. She felt she was at fault and needed to rectify the situation.

I felt guilty towards the ones who couldn't succeed in my lessons. (Q#57)

Another teacher (#58) felt challenged to teach struggling readers and felt a sense of fulfilment and reward when she succeeded. Success in learning led to positive effects on their personal lives.

I consider it a challenge to teach pupils who really need me. It is so much more fulfilling and rewarding. It builds self esteem and affects their lives in different areas. (Q#58)

The comments made by the four interviewed teachers (N.B.; G.H.; J.T.; S.F.) emphasized the commitment they felt towards their students' ability to read English well. They felt obligated to succeed because of the importance of English on the future lives of their students. Learning English and consolidating beginning reading was seen as a mission by these teachers who saw it as granting a present that would ensure success in life. Knowledge of literacy skills in English was considered the optimal feeling of satisfaction and achievement for the EFL teacher.

*Since I took the programme I make sure that at the end of fourth grade I don**'t** have as many non-readers as I had in the past. **It matters to me.** I shouldn't have non-readers in the class and I understand the importance of their ability to read today for their future learning of English. (N.B.)*

*I see it as a **mission** to teach reading (J.T.)*

*I want them to learn because they need English throughout their lives. Anything they'll want to do later in life will need English and I want them to have it. **It is my gift to them.** Hopefully all the children will get to a level where they feel that English is something they can use in life then I couldn't ask for more. (S.F.)*

One interviewee (G.H.) saw herself as an educator committed to the advancement of her students in addition to being an EFL teacher.

*I am an educator. I don't care about marks, marks and marks. **I care about the development of the kid** and in order for him to learn and be a good pupil, I need to have a good relationship with the kid and in this way I need to show him I am there for him,*

what is important for me as a teacher and then when I have all those things as the basics I can put English on that. (G.H.)

It emerges that responses given by teachers both in the questionnaires and in the un-structured interviews reflected a deep professional commitment towards their students and their academic achievements. They felt that it was imperative to teach reading properly because the successful outcome of this process went beyond the classroom and accompanied the student throughout his/her life. Teachers felt a responsibility to make this happen.

5.2.6 Summary of Results of Research Question 1

In sum of the first research question, it may be concluded that the incentives of the teachers to join the programme were professional. The participating teachers failed to achieve the desired reading levels among their students, were frustrated, and developed a negative sense of self efficacy. They searched for a solution to achieve greater success with the students and felt responsible and committed to improve their teaching methods for that purpose. Many teachers were using other methods or working intuitively. Those who used the phonics approach or elements of it did not know it fully (see results of second research question) and were pressured by the system not to do so. The overall lack of success and the feeling of negative self efficacy were the trigger that led the teachers to search for solutions within the framework of a suitable PD programme. They thus initiated a significant process of PD.

5.3 Research Question 2

Knowledge is a basic component of the process of PD and is central in the conceptual framework of this research (See figure 4). The results showed that teachers lacked the knowledge needed to teach beginning reading. The possibility of success was low and they needed to undergo a process of PD that would consolidate their basic knowledge from the outset.

The second research question focused on the teachers' knowledge of phonics and the extent to which it changed during the programme. As it may be recalled the knowledge

questionnaire was filled out prior to the programme and after its end by teachers in eight groups. Thus, pre study differences between the eight groups are first presented, followed by an examination pre-post knowledge change.

5.3.1 Preliminary Analyses

Pre study differences between the eight groups were examined, for the content areas of knowledge (concepts of phonics, knowledge of vowels, differentiation between syllables, phoneme count, syllable count, spelling rules, terminology, total knowledge score), as well as for the separate items of the questionnaire. Initial differences in knowledge with regard to the content areas were examined with a multivariate analysis of variance (MANOVA). Scores range between 0 and 100. Means and standard deviations by group, and the F tests are shown in Table 5.

Table 5

Pre-test means and standard deviations of knowledge by content area and differences by group (N=139)

	Group1 (N=31)	**Group2 (N=15)**	**Group3 (N=12)**	**Group4 (N=17)**	**Group5 (N=13)**	**Group6 (N=14)**	**Group7 (N=18)**	**Group8 (N=19)**	**Difference**
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	F(7,131) (η^2)
Concepts of phonics	55.13 (17.08)	58.82 (14.05)	44.70 (13.68)	50.27 (18.22)	46.15 (14.11)	46.10 (15.73)	41.10 (15.25)	46.41 (14.18)	1.77 (.09)
Know-ledge of vowels	77.42 (25.29)	82.35 (24.63)	83.33 (24.62)	82.35 (24.63)	65.38 (37.55)	78.57 (32.31)	79.17 (32.69)	76.32 (30.59)	0.59 (.03)
Differen-tiation between syllables	61.29 (30.85)	70.00 (36.84)	58.33 (41.74)	50.00 (35.36)	61.54 (46.34)	64.29 (36.31)	69.44 (42.49)	73.68 (38.62)	0.69 (.03)
Phoneme count	55.20 (25.90)	40.52 (19.62)	45.37 (19.22)	44.44 (24.22)	43.59 (24.20)	52.38 (23.24)	42.51 (24.77)	57.89 (25.28)	1.32 (.07)
Syllable count	73.66 (25.74)	64.44 (19.79)	73.61 (20.67)	80.39 (15.85)	76.92 (17.40)	69.05 (23.44)	64.81 (36.10)	75.44 (26.28)	0.88 (.04)
Spelling rules	42.74 (22.54)	40.00 (28.03)	39.58 (19.82)	38.24 (23.58)	40.38 (28.02)	48.21 (24.93)	31.94 (26.85)	30.26 (22.94)	0.96 (.05)
Termi-nology	65.81 (26.93)	66.67 (19.52)	56.67 (18.75)	51.76 (24.55)	55.38 (32.82)	57.14 (33.15)	42.22 (29.01)	52.63 (24.23)	1.73 (.09)
Total score	59.55 (13.88)	56.71 (9.88)	52.99 (7.03)	54.15 (14.01)	52.66 (16.03)	55.31 (14.53)	48.75 (14.06)	55.60 (10.91)	1.43 (.07)

For content areas: F(49, 863)=1.10, n.s., η^2=.06

The table shows that the groups did not differ significantly at pre-test in the various content areas. In addition, no significant differences were found between them in the total knowledge score: $F(7,137)=1.43$, n.s., $\eta^2=.07$. It may be concluded that the groups started the programme at a rather similar level. It is interesting to note that, in general, knowledge of vowels received the highest score (about 79 on average, see Table 7), syllable count received a score of about 73 on average, differentiation between syllables – 64 on average, terminology – 57, and concepts of phonics, phoneme count and spelling rules all received blow 50 on average. The total average knowledge score was about 55 (see Table 7).

In addition, pre-test differences in knowledge were examined with regard to the separate items. Frequencies of correct answers and differences by group appear in Table 6.

Table 6

Pre-test frequencies of correct answers by item and differences by group (N=141-147)

	Group 1 (N=31)		**Group 2 (N=17)**		**Group 3 (N=12)**		**Group 4 (N=17)**		**Group 5 (N=13)**		**Group 6 (N=14)**		**Group 7 (N=18-24)**		**Group8 (N=19)**		**Difference**
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	$\chi^2(7)$
Phonics																	
q1	26	83.9	13	76.5	11	91.7	15	88.2	12	92.3	12	85.7	20	83.3	18	94.7	3.61
q2	19	61.3	9	52.9	2	16.7	10	58.8	5	38.5	6	42.9	6	25.0	7	36.8	13.48
q3	5	16.1	1	5.9	3	25.0	6	35.3	0	0.0	2	14.3	4	16.7	3	15.8	9.02
q4	28	90.3	16	94.1	9	75.0	16	94.1	9	69.2	14	100.0	20	83.3	17	89.5	9.82
q5	28	90.3	15	88.2	7	58.3	7	41.2	8	61.5	12	85.7	12	50.0	9	47.4	*** 25.16
q6	26	83.9	16	94.1	8	66.7	13	76.5	11	84.6	9	64.3	16	66.7	8	42.1	16.97*
q8	25	80.6	14	82.3	9	75.0	14	82.3	13	100.0	9	64.3	19	79.2	17	89.5	6.95
q9	11	35.5	10	58.8	7	58.3	3	17.6	5	38.5	4	28.6	4	16.7	5	26.3	13.92
q10	10	32.3	7	41.2	2	16.7	4	23.5	1	7.7	1	7.1	4	16.7	4	21.1	9.31
q11	7	22.6	6	35.3	1	8.3	1	5.9	1	7.7	1	7.1	1	4.2	4	21.1	12.33
q12	3	09.7	3	17.6	0	0.0	5	29.4	1	7.7	1	7.1	2	8.7	5	26.3	9.99
Vowels																	
q7	31	100.0	15	88.2	11	91.7	17	100.0	10	76.9	11	78.6	21	87.5	18	94.7	11.48
q15	17	54.8	13	76.5	9	75.0	11	64.7	7	53.8	11	78.6	17	73.9	11	57.9	5.97

Note:

q1-Word that begins with a consonant sound, q2- Pronunciation of two/three consonants, q3- Word with a consonant digraph, q4 - A soft *'c'*, q5 - A hard *'g'*, q6 -A long vowel sound, q8- A short vowel sound, q9 - A vowel sound, q10 - The *schwa* sound, q11- A diphthong is, q12 - Word with a vowel digraph, q7 - The sound of *'a'* in *aik*, q15 - The *'y'* sound in *'kly'*, q13 - Word with an open syllable, q14- Word with a closed syllable.

Table 6 – continued

	Group 1 (N=31)		Group 2 (N=17)		Group 3 (N=12)		Group 4 (N=17)		Group5 (N=13)		Group 6 (N=14)		Group 7 (N=18-24)		Group8 (N=19)		Difference
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	$\chi^2(7)$
Differentiation between Syllables																	
q13	15	48.4	9	52.9	6	50.0	5	29.4	7	53.8	8	57.1	13	56.5	14	73.7	7.52
q14	23	74.2	15	88.2	8	66.7	12	70.6	9	69.2	10	71.4	17	73.9	14	73.7	2.41
Phoneme counting																	
drill	18	58.1	8	47.1	9	75.0	11	64.7	5	38.5	10	71.4	12	52.2	14	73.7	7.77
says	27	87.1	8	47.1	9	75.0	8	47.1	7	53.8	7	50.0	11	47.8	10	52.6	15.45*
shrimp	12	38.7	6	35.3	4	33.3	9	52.9	5	38.5	10	71.4	8	34.8	12	63.2	9.83
sawed	21	67.7	7	41.2	5	41.7	9	52.9	7	53.8	7	50.0	12	52.2	10	52.6	4.30
know	22	71.0	10	58.8	6	50.0	6	35.3	9	69.2	5	35.7	8	34.8	12	63.2	13.25
sing	14	45.2	5	29.4	2	16.7	7	41.2	6	46.2	5	35.7	10	41.7	12	63.2	8.18
mix	6	19.4	1	5.9	1	8.3	3	17.6	1	7.7	4	28.6	1	4.4	4	21.1	7.40
quack	8	25.8	5	29.4	5	41.7	6	35.3	4	30.8	5	35.7	8	34.8	9	47.4	2.98
shook	26	83.9	12	70.6	8	66.7	9	52.9	7	53.8	13	92.9	18	78.3	16	84.2	12.60

Table 6 – continued

	Group1 (N=31)		Group 2 (N=17)		Group 3 (N=12)		Group 4 (N=17)		Group 5 (N=13)		Group6 (N=14)		Group 7 (N=18-24)		Group8 (N=19)		Diffe-rence
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	$\chi^2(7)$
Syllable counting																	
lighten	30	96.8	16	94.1	11	91.7	17	100.	13	100.	12	85.7	20	87.0	17	89.5	5.87
coil	20	64.5	9	52.9	9	75.0	13	76.5	9	69.2	9	64.3	13	56.5	15	78.9	4.99
talked	15	48.4	5	29.4	5	41.7	8	47.1	7	53.8	5	35.7	16	69.6	11	57.9	8.44
shirt	21	67.7	12	70.6	11	91.7	16	94.1	10	76.9	11	78.6	16	69.6	16	84.2	7.49
banana	28	90.3	17	100.	12	100.	17	100.	13	100.	13	92.9	20	87.0	17	89.5	7.02
Inter-national	23	74.2	10	58.8	5	41.7	11	64.7	8	61.5	8	57.1	12	52.2	10	52.6	5.46
Spelling rules																	
b1	21	67.7	11	64.7	8	66.7	9	52.9	7	53.8	7	50.0	11	47.8	9	47.4	4.25
b2	15	48.4	5	29.4	5	41.7	9	52.9	6	46.1	11	78.6	6	33.3	8	42.1	9.56
b3	4	12.9	4	23.5	1	8.3	1	5.9	2	15.4	2	14.3	2	11.1	1	5.3	3.92
b4	13	41.9	7	41.2	5	41.7	7	41.2	6	46.1	7	50.0	6	33.3	5	26.3	2.67
Terminology																	
c1	28	90.3	16	94.1	11	91.7	12	70.6	7	53.8	10	71.4	12	66.7	12	63.2	14.79*
c2	28	90.3	17	100.	9	75.0	10	58.8	8	61.5	10	71.4	9	50.0	14	73.7	18.87**
c3	7	22.6	1	5.9	0	0.0	2	11.8	5	38.5	4	28.6	2	11.1	2	10.5	11.80
c4	19	61.3	9	52.9	4	33.3	7	41.2	7	53.8	7	50.0	6	33.3	11	57.9	6.00
c5	20	64.5	13	76.5	10	83.3	13	76.5	9	69.2	9	64.3	9	50.0	11	57.9	5.97

*p<.05, **p<.01, ***p<.001

Note: b1 - Word that does not follow spelling patterns, b2 - Spelling rule - two vowels written together, b3 - Original English words do not end with 'i', b4 - Spelling rule - vowel-consonant-e pattern, c1 - Multisensory approach to reading, c2 - Phonics is the application of, c3 - The smallest unit of sound is, c4 - The smallest sound – bearing unit is, c5 - Phonemic awareness is.

The table shows that, in general, few differences were found between the groups. Out of 39 items significant differences were found in 5 (13%). There are two differences in understanding concepts of phonics (out of eleven variables), one difference in phoneme counting (out of nine variables), and two differences in knowledge of terminology (out of five variables).

Further examination of these differences revealed that –

Concepts of phonics –

For question #5 groups 1,2, and 6 had better knowledge than groups 4,5,7, and 8.

For question #6 groups 1,2, and 5 had better knowledge than group 8.

Phoneme counting –

Says – group 1 had better knowledge than all other groups, except for group 3.

Terminology –

For question #1 groups 1, 2, and 3 had better knowledge than groups 5, 7, and 8.

For question #2 groups 1 and 2 had better knowledge than groups 4, 5, and 7.

These differences tend to be scattered, although, with regard to these five questions, in general and stated with caution, groups 1 and 2 seemed to know more than groups 5 and 7, and to some extent more than groups 4 and 8.

However, considering the similarities across groups in terms of the content areas, it seems that no meaningful differences existed between the eight groups at the start of the programme. In other words, all the respondents did not have sufficient basic knowledge.

5.3.2 Main Analyses

This section examines the change in knowledge which came about as a result of participation in the EMPI programme. It presents pre-post differences, i.e., change in knowledge, in the content areas as well as in the separate items. In addition, knowledge is rank ordered by content area, and intercorrelations between the content areas are examined.

Pre-post differences in knowledge

Pre-post differences were examined with a multivariate analysis of variance for the content areas, and a univariate analysis of variance for the total knowledge score. (It should be mentioned that the total knowledge score was examined with a univariate analysis of variance rather than a t-test in order to allow for its comparison with the results pertaining to the content areas). Means and standard deviations by time, as well the F tests are presented in Table 7.

Table 7

Means and standard deviations of knowledge by content area and differences by time (N=255)

	Pre-test (N=140)	**Post-test (N=115)**	**Difference**
	M (SD)	M (SD)	F(1,253) (η^2)
Concepts of phonics	49.87 (15.97)	72.09 (18.91)	103.50*** (.29)
Knowledge of vowels	78.93 (28.17)	85.65 (23.66)	4.15* (.02)
Differentiation between syllables	63.93 (37.49)	86.96 (28.93)	19.13*** (.10)
Phoneme count	48.73 (24.52)	60.97 (23.33)	16.42*** (.06)
Syllable count	72.86 (24.51)	79.42 (20.86)	5.17* (.02)
Spelling rules	38.39 (23.88)	45.22 (28.47)	4.34* (.02)
Terminology	56.57 (26.92)	73.04 (23.40)	26.56*** (.10)
Total knowledge score	54.77 (13.21)	69.41 (14.35)	73.51*** (.22)

*p<.05, **p<.01, ***p<.001

For content areas: $F(7, 247)=17.08$, $p<.001$, $\eta^2=.33$

The table shows significant differences in all content areas, as well as in the total score. The participating teachers have significantly increased their knowledge level in all content areas. It may be noticed that the highest differences are in concepts of phonics,

the total knowledge score, differentiation between syllables and terminology, while the lowest differences are in syllable count, spelling rules and knowledge of vowels. Graph 1 demonstrates the change in knowledge.

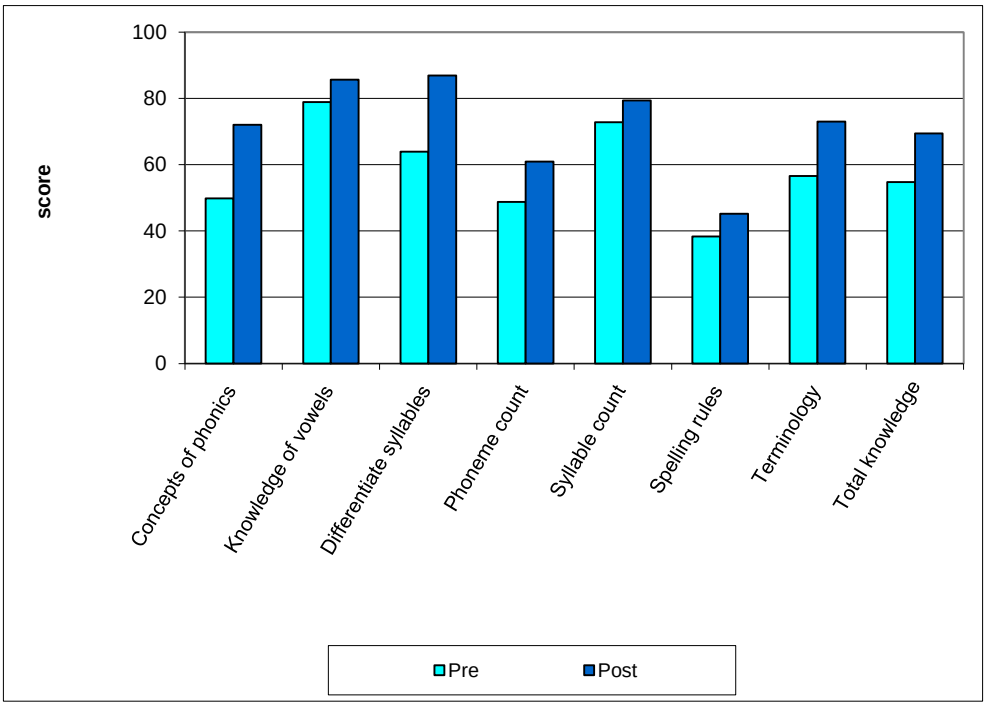

Figure 5 Teachers' Knowledge by Time

Rank ordering of knowledge

Rank ordering the knowledge in the content areas was conducted with two repeated measures MANOVA. That is, scores of knowledge in the seven content areas were rank ordered at pre- and at post-test. Rank ordering the scores was found significant at both times: for pre-test $F(6,840)=46.55$, $p<.001$ $\eta^2=.25$, and for post-test $F(6,684)=55.95$, $p<.001$, $\eta^2=.33$.

At pre-test scores for knowledge of vowels were the highest, higher than the scores for syllable count. These were higher than the scores for differentiation between syllables and terminology, which in turn were higher than scores for concepts of phonics and phoneme count. The lowest scores were achieved for spelling rules.

At post-test scores for differentiation between syllables and knowledge of vowels were the highest, higher than the scores for syllable count. These were higher than scores for

terminology and concepts of phonics, which in turn were higher than the scores for phoneme count. Lowest were the scores for spelling rules. (For details of the pairwise differences see Table 1, appendix 10).

It is interesting to note that although knowledge is significantly higher at post-test than at pre-test, the order of knowledge by content areas remained rather similar. In other words, highest scores were found for syllable count, knowledge of vowels and differentiation between syllables, and lowest scores were found for spelling rules.

Further, time differences have been examined in each item, using Z test due to the dichotomous scale (Mann-Witney U test). These are shown in Table 8.

Table 8

Frequencies of correct answers by item and differences by time (N=256-263)

	Pre-test (N=141-147)		**Post-test (N=115-116)**		**Difference**
	N	%	N	%	Z
Phonics					
Word that begins with a consonant sound	127	86.4	106	91.4	1.26
Pronunciation of two/three consonants	64	43.5	101	87.1	7.24***
Word with a consonant digraph	24	16.3	67	57.8	7.00***
A soft *'c'*	129	87.8	112	96.6	2.55*
A hard *'g'*	98	66.7	96	82.8	2.94**
A long vowel sound	106	72.6	97	83.5	2.08*
A short vowel sound	120	81.6	98	84.5	0.61
A vowel sound	49	33.3	70	60.3	4.36***
The *schwa* sound	33	22.5	58	50.0	4.66***
A diphthong is	22	15.0	60	51.7	6.38***
Word with a vowel digraph	20	13.7	56	48.3	6.11***
Vowels					
The sound of *'a'* in *aik*	134	91.2	107	92.2	0.32
The *'y'* sound in *'kly'*	96	65.8	92	79.3	2.42*
Differentiation between Syllables					
Word with an open syllable	77	52.7	98	84.5	5.41***
Word with an closed syllable	108	74.0	103	88.8	3.00**

Table 8 – continued

	Pre-test (N=141-147)		Post-test (N=115-116)		Difference
	N	%	N	%	Z
Phoneme counting					
drill	87	59.6	91	78.5	3.24**
says	87	59.6	73	62.9	0.55
shrimp	66	45.2	76	65.5	3.27**
sawed	78	53.4	67	57.8	0.70
know	78	53.4	71	61.2	1.26
sing	61	41.5	64	55.2	2.15*
mix	21	14.4	46	39.7	4.65***
quack	50	34.3	42	36.2	0.33
shook	109	74.7	105	90.5	3.29**
Syllable counting					
lighten	136	93.2	107	92.2	0.28
coil	97	66.4	84	72.4	1.04
talked	72	49.3	55	47.4	0.31
shirt	113	77.4	101	87.1	2.01*
banana	137	93.8	113	97.4	1.37
international	87	59.6	91	78.5	3.24**
Spelling rules					
Word that does not follow spelling patterns	83	56.9	72	62.1	0.85
Spelling rule - two vowels written together	65	46.1	73	63.5	2.77**
Original English words do not end with 'i'	17	12.1	14	12.2	0.03
Spelling rule- vowel-consonant-e pattern	56	39.7	50	43.5	0.61

Table 8 – continued

	Pre-test (N=141-147)		Post-test (N=115-116)		Difference
	N	%	N	%	Z
Terminology					
Multisensory approach to reading	108	76.6	113	98.3	5.01***
Phonics is the application of	105	74.5	99	86.1	2.29*
The smallest unit of sound is	23	16.3	49	42.6	4.65***
The smallest sound – bearing unit is	70	49.7	71	61.7	1.98*
Phonemic awareness	94	66.7	88	76.5	1.73

*p<.05, **p<.01, ***p<.001

The table shows significant time differences in several items of each content area: nine of the eleven items of concepts of phonics, one of the two items of knowledge of vowels, both items of differentiation between syllables, five of the nine items of phoneme count, two of the six items of syllable count, one of the four items of spelling rules, and four of the five items of terminology. A significant difference was found in 24 of the total of 39 items (61.5%). In all these cases the post-test score of knowledge was higher than the pre-test score.

Of the other 15 items, the post-test score was higher than the pre-test score in 13 items, although not significantly so. Only in two items ('lighten' and 'talked') was the post-test score lower than the pre-test score, and not significantly so. The gap ranged from -1.9 points to -1.0 point (out of 100).

The results emerging from table 7 and table 8 show significant increase in knowledge. This outcome shows consolidation of the basic corner stone of the process of PD. Once knowledge is in place the other components (practices, beliefs, student outcomes and positive self efficacy) are likely to be established.

Inter correlations between content areas

Intercorrelations between the content areas were conducted to examine the extent to which knowledge in some areas of phonics is related with knowledge in other areas. These are presented in Table 9.

Table 9

Inter correlations between scores of knowledge, by time (N=256)

	2.	**3.**	**4.**	**5.**	**6.**	**7.**
	Pre-test (N=141)					
1.Concepts of phonics	.22**	.18*	.24**	.09	.10	.35***
2.Knowledge of vowels		.03	.16	.12	-.02	.26**
3.Differentiation between syllables			.19*	.10	.03	.04
4.Phoneme count				.26**	.20*	.22**
5.Syllable count					.18*	.13
6.Spelling rules						.28***
7.Terminology						
	Post-test (N=115)					
1.Concepts of phonics	.21*	.18	.33***	.27**	.35***	.34***
2.Knowledge of vowels		.23*	.19*	.13	.29***	.14
3.Differentiation between syllables			.22*	.31***	.10	.06
4.Phoneme count				.30***	.35***	.33**
5.Syllable count					.17	.26**
6.Spelling rules						.31***
7.Terminology						

*p<.05, **p<.01, ***p<.001

The table shows that all (but one) correlations are positive, showing that when the teachers exhibited knowledge in a content area they were likely to have knowledge in other areas as well. However, the magnitude of the correlations is moderate, and one's knowledge in a certain content area cannot be concluded from his/ her knowledge in another area.

Pre-test correlations reflect a somewhat different picture than the post-test correlations. At pre-test, 11 of the 21 correlations are significant (52.4%) and eight (38.1%) are $r=.20$ or higher. At post-test, 15 correlations are significant (71.4%) and all but one are above $r=.20$. Further, pre-test correlations range from $r=-.02$ (n.s.) to $r=.35$ ($p<.001$), averaging at $r=.16$ ($SD=.10$), while post-test correlations range from $r=.10$ (n.s.) to $r=.35$ ($p<.001$), averaging at $r=.24$ ($SD=.09$). That is, post-test correlations tend to be higher than pre-test correlations ($t(20)=2.51$, $p<.05$), yet all are moderate correlations.

These results show that knowledge across the content areas is moderately interrelated, and tends to be more so at post-test than at pre-test. Coherence within the participants' knowledge, across the various content areas, is greater at post-test than at pre-test.

5.3.3 Summary of Results of Question 2

Results showed a significant increase in knowledge in all content areas. Only a few differences were found between the groups at the beginning of the programme. That is, despite the fact that some were pre-service teachers and others were in-service teachers, knowledge was quite narrow. Significant increases were noted in all content areas, as well as in the total knowledge score, at the end of the programme. The highest increases were in concepts of phonics, differentiation between syllables and terminology, and the lowest were in syllable count, spelling rules and knowledge of vowels. Knowledge of spelling rules did not improve enough and remained low. Most inter-correlations between the content areas were positive, yet moderate. That is, when the teachers had knowledge in a content area they were likely to have knowledge in other areas as well, yet knowledge in a certain content area could not be concluded from knowledge in another area.

5.4 Research Question 3

The third research question focused on the teachers' perceptions of the process of PD that they had undergone. The description of the results pertaining to this research question starts with the end result of a sense of positive self efficacy and teachers' perceptions of the process of PD itself. It continues with the teachers' perceptions of the impact of the programme in terms of change in knowledge, change in teaching practices, student outcome, change in beliefs, and teachers' professional development. The results are based on both a quantitative analysis of the responses received to the closed questions, and a qualitative analysis of the responses to the open questions. The content categories that are used are in line with the conceptual framework of the research, composed of: Negative sense of self efficacy → knowledge acquisition → change in teaching practices → changed student outcomes → change in teachers' beliefs and attitudes → individual professional development and change in sense of self efficacy.

5.4.1 Positive Sense of Self Efficacy

The results of this research showed that teachers who completed the programme, later on developed a sense of positive self efficacy, which stood in contrast to their initial negative feelings.

In their response to a closed question about the extent to which they gained professional confidence, almost all teachers replied positively. Most teachers (N=47, 73%) claimed it to a large extent, and others (N=14, 22%) – to some extent. Only two teachers (3%) replied that the programme had no effect on their confidence.

Seventeen teachers added a description of their positive sense of self efficacy after applying the approach taught in the programme. They felt that their questions were answered and they were provided with practical tools allowing them to feel more qualified and able to face difficulties in the field. They believed in their ability to carry out their job professionally.

It gave me the confidence to teach differently and to cater to different needs of different students. Q #1

Now, I feel I am qualified and well prepared to teach pupils with learning disabilities. (Q#30)

I found the programme very interesting and it has answers for all my questions. (Q#40)

I always considered myself a professional teacher. However, the programme gave me more tools to work as a professional. Teachers are more empowered to help their students which leads to increased self esteem as a professional. (Q#52)

I feel much more confident and that I'm on the right way. Q#2

I feel more authoritative .Q#19

I began to believe in myself and with that confidence I have been able to help others. Q# 53

The students' success was an important factor for the teachers and two (#6, #46) were motivated to continue searching for and finding ways to improve the students' learning outcomes.

Every time they say "I can do it", and every time they smile after their success is what makes me go on studying and reading about new, different, creative ways to help them. (Q#6)

The understanding of how students with dyslexic characteristics feel makes me feel more motivated to improve their grades and their self images. (*Q#46)*

Teachers (#46, #58, #51) expressed a feeling of self fulfilment which resulted from working successfully with students having difficulties. They were able to cope with the difficulties and provide solutions.

Nowadays, I fulfil myself. (Q#46)

I consider it a challenge to teach pupils who really need me. It's so much more fulfilling and rewarding. (Q#58)

I am able to make a difference to these children, Q#51

The programme boosted the confidence of the teachers in their professionality. Once they had acquired both a theoretical and practical basis they felt they could carry out their work efficiently.

When I teach beginning reading I do not do it intuitively any more, instead I rely on a system that helps me plan and build the reading ability professionally and with confidence. (Q#16)

The whole perspective of teaching has changed since I took the programme, I became more professional and confident in teaching students with dyslexic characteristics how to read, and I own the tools that enable me to teach any text without fear. I am not afraid anymore. I can prevent my students from failure. (Q#46)

Since I had the tools to help them I became more confident as a teacher. Q#37

That is, the teachers expressed a positive sense of self efficacy because their professional self esteem and confidence had been boosted as a result of applying the approach learnt in the programme. They owned the tools to deal with the difficulties and felt they would succeed with their students. They felt they knew how to avert student failure.

5.4.2 Process off Professional Development

This section describes the teachers' perceptions of the process of PD that they have undergone. First, in response to a closed question most teachers claimed that teaching is a profession, rather than simply a job, to a large extent (N=41, 64%) or somewhat (N=12, 19%). Two teachers (3%) agreed with this statement only to a small extent, and six teachers (9%) disagreed with it. Viewing teaching as a profession, they proceeded to describe the narrative of their professional development in terms of: the process of professional development they underwent, professionality, the professional impact of the programme, the personal impact of the programme, the self as learner for life, and the change in status at school that resulted from the changed knowledge and practices. As a

result of the process of professional development, several teachers described their achievements after the programme.

Process of individual professional development

Nine teachers related to the process of professional development they have undergone. They made a direct connection between their participation in the programme and their emergence at the end as professional teachers. The experience in the programme served as the lever to bring about professional growth.

The programme has brought about changes in my professional development. (Q#63)

I feel much more confidence that I'm on the right way. Taking this programme has tremendously changed my whole attitude, teaching methods and even the way I regard every student in my classes. I am proud to admit that I consider myself a more professional teacher after taking this programme. (Q#2)

Two teachers (#47, #53) felt that participation in the programme was a significant stage in their professional lives and a new beginning.

The programme opened the 'windows to the world'. It was really an important step and stage in my life. (Q#47)

This programme was an amazing experience for me. It was the beginning of a whole new world. It has greatly changed my professional life and career. (Q#53)

One teacher (#46) felt more satisfaction and fulfilment in her professional development.

I feel more satisfied and even more professional than before. I feel professional fulfilment. (#46)

Another teacher (#52) felt that the programme had enabled her to develop professionally and gave her skills which was something lacking.

I can honestly say I feel like a professional in this area with special skills that most teachers lack. It changed my life as a teacher. (Q#52)

These teachers describe a meaningful stage in their professional lives. They felt that the application of knowledge and skills gained in the programme fostered their professional development and made them more professional teachers.

Professionality

Twenty two teachers wrote about their professionality. Their responses showed that the EFL teachers who participated in the programme took their work seriously. As mentioned before, they expressed the opinion that teaching is a profession and none of them had ever considered it a job. Even before their participation in the programme this was their opinion.

I always thought and believed that teaching is really a profession which needs to be learnt and much effort has to be put into it. (Q#29)

Teaching is profession that requires the investment of time, knowledge and experience. A job you finish at 5p.m. but teaching remains with you also at home. (Q#54)

Three teachers (Q#20, Q#41 & #49) went on to define teaching as a 'vocation'.

I have never thought teaching was simply a job. I've always believed it was a vocation. (Q#20)

One teacher even felt that teaching is a *'noble'* profession.

I always felt that teaching is a noble profession and sharing with other teachers in this programme only strengthened my belief. (Q#26)

As a result of their participation in the programme three teachers (Q#2, Q#46, Q#64) felt they had become more professional.

I am proud to admit that I consider myself a more professional teacher after taking this programme. (Q#2)

That is to say, the programme reinforced the strong belief that teaching is a respected profession that is practiced by professionals who are aware of the responsibility that it carries.

Professional impact

Fifteen teachers delineated the professional impact of the programme on them. They needed practical guidance and theoretical background to enable them to cope with difficulties they came across in the field. Neither the English Inspectorate nor the Ministry of Education provided answers to concerned teachers. Participation in the EMPI PD programme seemed to fill this void. They described it as leaving a strong professional impact on them.

The programme changed my attitude, life and professional development. (Q#63)

It was the best programme I ever took and helped me the most in my teaching. (Q#42)

It was an eye-opening programme for me. (Q#22)

Two teachers (#5, #53) acknowledged the innovative input the programme provided that set them on a new teaching path.

I learned something new every time. (Q#5)

The programme was the beginning of a whole new world. (Q#53)

Three teachers (#10, #51, #56) commented how it influenced their work with children with dyslexic characteristics.

It has greatly influenced the way I work and helped me to teach students with all kinds of learning difficulties. (Q#51)

Three other teachers (#37, #44, #48) reported that the programme enabled them to change their approach to teaching beginning reading and to apply the phonics approach in the regular classroom.

Your programme was one of the ones that taught me what I could do and what I couldn't do within the classroom framework. (Q#44)

That is, the teachers describe a deep professional impact that the programme left on them. The innovative input derived from the process of PD enabled them to cope with difficulties in the classroom, to teach beginning reading better, and cope with students with dyslexic characteristics successfully.

Personal impact

In addition to professional impact, four teachers stressed that the programme had a personal impact on their lives as well. They underwent a professional change which has changed them both as teachers and as people.

I have become a different person since I took the programme. (Q#47)

Three teachers (#58, #61, #63) described the impact of the programme by saying that it had been the force that brought significant change. They used the words 'changed my life':

The programme has changed my life. (Q#63)

In other words, the programme left a major impact on the teachers and changed their lives both professionally and personally.

Learner for life

Another category of the effect of the process of PD was— 'learner for life'. It emerged from the description of ten teachers. They expressed the opinion that professional development is an on going process which begins during pre-service training and carries on throughout the teacher's career. It reflects the constant need to study and acquire knowledge so that professional growth can continue. In the teachers' opinion, on-going study is an integral part of the way they see themselves as professionals.

To be professional means to keep learning, to change with the times, to be responsible and serious. This programme influenced me to be all of the above. (Q#53)

I've always felt that teaching is a profession and that we (teachers) should be as professional as possible. Keep updated, read professional literature, study, participate in in-service programmes etc. (Q#17)

Good teachers are those who never stop learning and experimenting. There is so much knowledge about teaching and about learning processes. A professional teacher has to seek knowledge constantly. (Q#58)

It is very important to go on attending programmes. A teacher must refresh what he/she knows and at the same time learn new things. There is always more to know as new research is being carried out all the time and it is important to go on and find ways to improve teaching. (Q#6)

Three teachers (#17, #34, #35) stressed the importance of reading professional literature in the subject area. They saw this as the way to be updated and to keep abreast of changes in the teaching profession.

I continue to read various professional forums to keep my knowledge current. (Q#34)

I read every article on the subject that comes my way, so subconsciously I must be gaining information all the time. (Q#35)

One teacher (#11) made a connection between her learning and personal improvement.

Teaching in the Arab sector I face a lot of frustrated pupils who find it difficult to read in Arabic let alone in a foreign language. I always try to learn new things that will help me to be a better person and as a result a better teacher. What affects me positively will also affect my pupils. (Q#11)

It is the teachers' perception that there is a connection between their on-going learning and their professional image. Lifelong learning was connected, in their opinion, with being a better professional teacher.

Change in status

As a result of their participation in the process of PD five teachers mentioned that their status at school has changed. They have become experts in the field of dyslexia and the rest of the staff collaborates with them on didactic matters. They feel that in their capacity as the remedial English teacher they receive respect from their colleagues and their advice is valued.

People approach me because I am a remedial teacher and not just an English teacher. They ask for my advice and consult me. Things that never happened before. (Q#60)

When I give advice to colleagues they respect my knowledge and are very appreciative for the help that I am able to offer. (Q#54)

One teacher (#53) even had an influence over changes and decisions made in her school particularly regarding issues related to readers with dyslexic characteristics and other struggling readers.

The positive feedback I received allowed me to participate in debates on students with dyslexic characteristics and influence change over the years. (Q# 53)

As a result of the programme some of the English remedial teachers have established a new status on the school staff. They are respected as the authority on dyslexia and are able to influence positive change.

Four teachers recommended this programme for other English teachers. They felt the programme was beneficial for them and stressed the need for well trained teachers of reading.

The best programme on earth! It should be a yearly programme and every teacher should attend it. Elementary school teachers do none of the things the programme teaches. (Q#25)

I think the programme is a "must" programme for every English teacher (after having some experience in the field) because the need in the field for such teachers is crucial. (Q#37)

The teachers were enthusiastic about the programme and acknowledged its relevance to the EFL reading teacher in the field.

Teachers' achievements after the programme

The teachers were asked about their professional development since completing the programme, as well as about what they managed to introduce into the school system and beyond it. It is likely that their achievements may have resulted, partly, from participating in the programme. In part they were related with the teachers' self perception as learner for life. Table 10 describes the teachers' professional development and attainments in the school system and beyond it.

Table 10

The teachers' professional development and attainments after completing the programme (N=64)

	N	%
Acquired additional qualifications in the learning disabilities field as: an EFL teacher, a diagnostic assessor, a higher degree	29	45.3
Provided assessment for students at risk at school	30	46.9
Opened a learning centre for students with dyslexic characteristics at school	11	17.2
Obtained additional teaching hours, semi-professional or volunteer assistance	14	21.9
Teaches students with dyslexic characteristics in at least one public / private capacity	56	87.5
Teaches students with dyslexic characteristics in several public / private capacities	39	60.9
Wrote a phonics reading programme, uses it in class	13	20.3
Owns a private learning centre	9	14.1
Teaches a programme related to dyslexia	8	12.5

The table shows that about half of the teachers (N=29, 45%) have acquired additional qualifications in the field of learning disabilities after completing the programme. Regarding attainments within the school system thirty teachers (47%) responded that since completing the programme they have been providing assessment for students at risk at school. Eleven teachers (17%) have managed to open a learning centre for students with dyslexic characteristics at school. About one fifth of the teachers (22%) have succeeded in obtaining additional teaching hours, assistance from a semi professional framework, or volunteers' assistance in the classroom.

Almost 90% of the participating teachers were teaching students with dyslexic characteristics at least in one capacity, after completing the programme, and about 60% of them were working in several places. In addition, since completing the programme, one fifth of the teachers (20%) wrote a phonics reading programme and used it in class, 15% owned a private learning centre, and 13% taught programmes related to learning disabilities.

Of all the attainments listed in this table 57 teachers (89%) managed to do at least one. 43 teachers (67%) reported doing more than one of these activities.

That is, the teachers reported on-going professional development since completing the programme, and various attainments in the school system and outside it. About half of them acquired additional qualifications in the field of dyslexia after completing the programme, about a half were providing assessment for students at risk at school, and some managed to open a learning centre for students with dyslexic characteristics at school. Almost all were teaching or working with, or in relation to, students with dyslexic characteristics in some capacity, after completing the programme. About 60% of them were teaching in more than one capacity: private, municipal, at school level, or academic. Some wrote a phonics reading programme and used it, some owned a private learning centre, and some taught programmes related to dyslexia.

Summary of Professional Development

In sum, most teachers have undergone a process of professional development which culminated in gaining a positive sense of self-efficacy. They have acquired and applied the knowledge gained in the programme. Their belief that teaching is a respected profession was reinforced, and they felt more professional teachers. They described the professional impact of the programme on them – in terms of gaining a new approach and tools to teach reading, and some went as far as to note a personal impact as well. Several teachers noted, on their own initiative, that being a professional means, for them, lifelong learning, and others described how their status at school has changed, from being an English teacher to becoming an authority on dyslexia and on the teaching of reading.

Several teachers have gone further and described their achievements after the programme. In many ways the teachers have undergone professional growth.

5.4.3 Change in Knowledge

Acquisition of knowledge is essential to the process of PD. Improvement in knowledge has been achieved during the programme (see results of the second research question). In addition, when asked about their perception, 55 teachers (86%) replied that the programme has enhanced their knowledge to a great extent, and eight (13%) commented that it has increased their knowledge to some extent. None chose the option of little or no change. This part focuses on the teachers' perceptions of the impact of the programme on the change in their knowledge, in terms of - change in content knowledge, change in pedagogical content knowledge, and change in understanding of dyslexia.

Change in Content Knowledge (CK)

Sixteen teachers described the change they experienced in their content knowledge as a result of the PD programme. As mentioned before, they felt they needed to consolidate a basis of subject- matter knowledge in the subject they taught. They lacked this knowledge and the programmes provided the necessary instruction. In their words:

I got new knowledge. (Q#37)

I have better knowledge of what I am doing. Now it is not all instinct. (Q#5)

I use the knowledge which I've got from the programme. (Q#56)

The improved knowledge of subject-matter sharpened the insights of the teachers.

Four teachers (#1, #2, #34, #48) explained how this knowledge had brought about deeper understanding of various aspects of teaching beginning reading.

The process of reading acquisition:

I now understand the process of reading acquisition, which is compulsory for every teacher who teaches beginning reading. I did not learn it in my teacher training. (Q#2)

Critical analysis of textbooks:

This programme has enabled me to look critically at the textbooks used to teach beginning reading and as a result I realized why there are so many "false starters", "emergent readers", and "non readers". (Q#1)

Justification of methodology:

I have the background to justify my methodology with academic research and statistics. (Q#34)

The effect of L1 reading skills on L2 reading:

I never realized before that pupils can guess words from a text and thus make the teacher think that they know how to read. Another insight I had was how much effect L1 reading skills affect L2 reading. (Q#48)

In sum, the teachers reported that they gained content knowledge, and described how this increased knowledge has promoted their understanding of the teaching of beginning reading and has made them better teachers.

Change in Pedagogical Content Knowledge (PCK)

Twenty teachers described the change that occurred in their pedagogical content knowledge as a result of the programme. They described that they learned how to make the subject they teach comprehensible to their students; that they acquired a repertoire of instructional strategies and found ways to represent the knowledge so that the students will succeed. They wrote:

I have deeper knowledge of the method now. (Q #14)

This programme helped me to expand my repertoire of strategies as a teacher. Not only do I create small stories for pupils with dyslexic characteristics but most of these materials are also given to the rest of the class. (Q#26)

I use all of the methods you gave us. The children love the games and the exercises. (Q#56)

I'll go on teaching reading using phonics. It has given me new insights, tools, ideas to add to my way of teaching reading. (Q#6)

One teacher (#1) mentioned that she learnt about the importance of spelling as a direct outcome to the programme and added it to her teaching repertoire.

I would also add that my spelling instruction has also developed because of this approach. Spelling of words is not about words connected thematically but by sounding out words. (Q#1)

Another teacher (#3) developed her own innovative method of teaching. This emerged as a direct outcome to the programme she had taken.

This new knowledge has led me to develop a new approach to teaching, which I call "Multisensory Differential Teaching" (MDT). I now teach small groups of pupils, according to their level, while the others work independently in multisensory study corners. I make sure that the tasks I give them are success orientated. (Q#3)

Another teacher (#46) found the newly acquired knowledge enabled her to find answers to her needs. She no longer followed the textbook blindly but was able to make changes as the need arose.

I used to follow the programme books as if they were the bible and only guide, but the programme gave me more than any programme book since it filled in all the gaps. I have answers to all my needs and questions. (Q#46)

In sum, the teachers described how the newly acquired pedagogical content knowledge enabled them to organize and present the issues of the subject matter for teaching. It also brought about critical understanding of existing teaching materials, added to the repertoire of content and even led to the development of new practices..

Change in understanding of dyslexia

The participating teachers were asked about the extent to which the programme has changed their understanding of, and attitude toward, dyslexia, and then they were asked to elaborate.

Most participating teachers (53 of them, 83%) responded that the programme has increased their understanding of dyslexia and changed their attitude toward students with dyslexic characteristics to a great extent. Eight teachers (12%) responded that their understanding changed "somewhat", two (3%) that it changed a little, and one that it did not change.

In addition, twenty three teachers responded to the open question. They described their initial lack of understanding of the difficulties facing children with dyslexia. The teachers reported lacking knowledge of the concept of dyslexia, yet they had to teach these children in their classes. It should be noted that prior to the inception of this programme both pre-service and in-service teachers had no official programme on dyslexia, and received no academic background or practical training in this area. They reported:

The programme gave me a whole new perspective as to pupils with dyslexic characteristics - their needs, abilities and made me admire them for their efforts. (Q#63)

I think before the programme I knew very little about the scholastic abilities of the non reader/ late reader student. I knew they were frustrated, not motivated and often ignored. (Q#53)

Over the years I have come to realize how much I did not understand in the past. Only through having the knowledge and much experience I can now realize what the students are actually coping with. As each year goes by, it is like peeling off another layer of understanding and getting closer to their needs. (Q#54)

Two teachers (#15, #48) described how they developed a feeling of sensitivity towards students with dyslexic characteristics.

I have developed sensitivity to my students' difficulties. (Q#15)

During the programme I learned a lot abut students with dyslexic characteristics and the struggling readers. My whole attitude was different when I approached my pupils after the programme. I look very carefully at each pupil. (Q #48)

One teacher (#9) elaborated on her sense of empathy enabling her to feel with the child with dyslexic characteristics.

I can better understand the processes underlying the difficulties my pupils face.

I understand the difficulties of students with dyslexic characteristics thoroughly and I have gained awareness and empathy which is no less important. (Q#9)

As a result of the programme one teacher (#4) explained how misconceptions of difficulties had been dispelled.

Seven years ago I was still under the impression that dyslexia was a visual problem mainly. (Q#4)

That is, most teachers reported that the programme changed their understanding of dyslexia as well as their attitudes toward students with learning problems. The programme provided them with a deeper understanding of the difficulties, problems and obstacles that students with dyslexia have to overcome. Both sensitivity and empathy increased and misconceptions were dispelled.

In sum, the teachers gained knowledge in the programme, and acknowledged the benefits of it. They gained pedagogical content knowledge as well, and were more aware of what dyslexia entails. Together, this knowledge and these insights started off the PD process and enabled them to do their work more effectively.

5.4.4 Change in Teaching Practices

According to the CF of this research change in teaching practices follows knowledge acquisition. This section deals with the participating teachers' perception of the extent to which they apply the knowledge they gained in the programme in everyday practice.

The teachers were first asked, in general, about the extent to which the programme affected the way they teach beginning reading. Most teachers (N=44, 69%) responded that it affected their teaching very much, and others (N=13, 20%) that it affected their teaching to some degree. Only three teachers (5%) claimed the effect was small, and two (3%) claimed there was no effect. That is, about 90% of the participating teachers thought the programme affected their teaching to some degree or very much.

Table 11 describes the extent to which the teachers apply various aspects of phonics in their current teaching.

Table 11

Teachers' application of various aspects of phonics in current teaching (N=63)

N (%)	**Never (1)**	**Hardly ever (2)**	**Sometimes (3)**	**Very often (4)**	**M (SD)**
Vocabulary acquisition	---	---	3 (4.7)	55 (85.9)	3.95 (0.22)
Word recognition	---	2 (3.1)	4 (6.3)	50 (78.1)	3.86 (0.44)
Phonics	2 (3.1)	1 (1.6)	6 (9.4)	49 (76.6)	3.76 (0.66)
Phonemic awareness	2 (3.1)	1 (1.6)	11 (17.2)	44 (68.8)	3.67 (0.69)
Spelling	1 (1.6)	---	17 (26.6)	40 (62.5)	3.66 (0.58)
Fluency	2 (3.1)	1 (1.6)	14 (21.9)	38 (59.4)	3.60 (0.71)
Multi-sensory teaching	1 (1.6)	4 (6.3)	15 (23.4)	37 (57.8)	3.54 (0.71)
Syllable division	1 (1.6)	4 (6.3)	19 (29.7)	35 (54.7)	3.49 (0.70)
Morphology	---	5 (7.8)	25 (39.1)	22 (34.4)	3.33 (0.65)
Onset and rime	5 (7.8)	5 (7.8)	20 (31.3)	19 (29.7)	3.08 (0.95)

The table shows that, in general, the teachers tended to apply most aspects of phonics they learnt, quite often, or at least sometimes. The most applied aspect was "vocabulary acquisition", applied "very often" by 86% of the teachers. EFL teachers continue to upgrade vocabulary even when they teach beginning reading. It should be recalled that

vocabulary acquisition is not a direct application of any reading approach, yet it is a strong remnant of the communicative approach and is of major importance to EFL teachers. An on-going increase in vocabulary is constantly pursued.

"Word recognition" and "phonics" were applied "very often" by 77%-78% of the teachers, and "sometimes" by most of the other teachers. "Phonemic awareness" was applied "very often" by 69% of the teachers and "sometimes" by another 17% of them. "Spelling" was applied "very often" by 63% of the teachers and "sometimes" by another 27% of them. Close to 60% of the teachers applied "fluency" and "multi-sensory teaching" very often, and another 22%-23% applied them sometimes. Next was "syllable division", applied "very often" by 55% of the teachers, and "sometimes" by 30% of them. Least applied were "morphology" and "onset and rime", used by 30%-34% of the teachers "very often", and by 31%-39% of them "sometimes".

Ranking of the application of the various aspects of phonics in current teaching was significant: $\chi^2(9)=84.79$, $p<.001$ (Friedman Test), showing that some aspects were more frequently applied than others (and statistically significantly so). An examination of the differences showed that "vocabulary acquisition", "word recognition" and "phonics" were significantly more frequently applied than all other aspects. “Phonemic awareness,” “spelling,” “fluency,” “multi-sensory teaching,” and “syllable division” were ranked second, and lowest were “morphology” and “onset and rime”.

Internal consistency of the teachers' application of the various aspects of phonics in current teaching was $\alpha=.79$ (Cronbach's alpha), showing that application of the aspects was rather consistent, although not all inclusive. Averaging the ten items resulted in a mean score of application of 3.62 (out of 4, SD=0.43), which is close to the highest mean possible. Indeed, counting the number of aspects each teacher marked as being applied at least "sometimes" revealed that, on average, the teachers applied 8.17 aspects (of 10, SD=2.62). Thirty teachers (48%) noted that they applied all 10 aspects, and another 17 teachers (27%) noted they applied eight to nine aspects. That is, three fourths of the teachers claimed they applied at least eight of the ten aspects of phonics.

That is, a significant gain in knowledge was found (see findings of second research question), accompanied by a wide application of what has been learnt in the programme, as reported by the participating teachers. "Vocabulary acquisition," "word recognition," and "phonics" were the most applied aspects, and "phonemic awareness," "spelling," "fluency," "multi-sensory teaching," and "syllable division" were quite highly applied as well. The least applied were "morphology" and "onset and rime", although still applied by most teachers at least sometimes.

Further, the participating teachers were asked about the extent to which they applied several principles of phonics taught in the programme. Their responses are listed in Table . 12.

Table 12

Teachers' application of principles of phonics in current teaching (N=64)

N (%)	**Not at all (1)**	**Very little (2)**	**Somewhat (3)**	**Very much (4)**	**M (SD)**
Use readings the child can cope with	---	1 (1.6)	15 (23.4)	47 (73.4)	3.67 (0.67)
Use success oriented materials	---	3 (4.7)	16 (25.0)	41 (64.1)	3.41 (1.05)
Teach cumulatively and recycle	3 (4.7)	1 (1.6)	16 (25.0)	39 (60.9)	3.27 (1.21)
Focus on smaller units of knowledge	2 (3.1)	7 (10.9)	24 (37.5)	28 (43.8)	3.13 (1.05)

The table shows that most teachers replied that they used readings the children could cope with to a great extent (73%) or at least to some extent (23%). Likewise, most used success oriented materials to a great extent (64%) or at least to some extent (25%). Similarly, they taught cumulatively and recycled the material to a great extent (61%) or at

least somewhat (25%). The least applied principle was focusing on smaller units of knowledge, applied greatly by 44% of the teachers and somewhat by 38% of them.

Finally, in terms of knowledge, the participating teachers were asked whether they initiated the use of small readers or additional readings, whether they used cards to teach grapheme phoneme correspondences and/or vocabulary, and whether they monitored the reading progress of the children with graphs or charts. Sixty teachers responded to these questions, as shown in Table 13.

Table 13

Teachers' use of small readers, cards, graphs or charts in current teaching (N=60)

	N	**%**
Use of small readers, additional readings	55	91.7
Use cards to teach grapheme phoneme correspondences / vocabulary	53	88.3
Monitoring the child's progress with a graph / chart	30	50.0

The tables clarifies that most teachers used small readers or additional readings (92%), as well as cards to teach grapheme phoneme correspondences and/or vocabulary (88%). A half of the teachers admitted to monitoring the reading progress of the children with graphs or charts. Once CK was established at the beginning of the process of PD, this led to changes in the teaching practices of the participants.

General practical application

In addition to answering the closed questions in the questionnaire the teachers openly described their application of the newly acquired knowledge. Sixteen teachers detailed how they generally applied the practices they acquired in their daily teaching.

The programme provided general insights as well as practical tools which enabled them to teach efficiently and achieve the optimal result of reading students.

When I teach beginning reading I do not do it intuitively any more, instead I rely on a system that helps me plan and build the reading ability professionally and with confidence. (Q#16)

Your programme has been one of the most practical programmes I have done in teaching. It has greatly influenced the way I work and helped me to teach students with all kinds of learning difficulties. It has been the foundation of all my work on teaching reading since then. (Q#5)

The programme has given me an overview and in how many ways I can try and help my students with dyslexic characteristics overcome difficulties. (Q#64)

Ten teachers expressed their satisfaction because they obtained practical directives to carry out reading instruction.

I got many practical "tips'. It was an eye opening programme for me. (Q#22)

I already was familiar with the EMPI method and understood the importance of decoding correctly but this programme defined more options and creative solutions. (Q#26)

That is, the EMPI programme provided practical solutions for teachers in the field. They were provided with the underlying understanding of how to use a phonics intervention g approach to teach beginning reading. They applied the practical systemic methodology they received from their PD, which brought about positive results.

<u>Specific practical application</u>

Twenty teachers went further along and elaborated how they applied the specific practices they acquired in the programme. Beyond the general description of the application of the newly acquired knowledge, these teachers described the specific tools that they applied in daily teaching.

I make sure that the tasks I give them are success orientated. (Q#3)

Only give the pupils material they can handle! If they can't succeed - more rote practice till they get the sound /prefix etc. (Q#8)

I review words all the time and I try to make sure that all the students succeed. (Q#60)

By giving them more attention in the lessons, testing them orally, memory aids, giving them time extension etc.… In short anything they need to succeed. (Q#41)

Four teachers (#4, #6, #12, #30) stressed the importance of repetition in their teaching. They considered this an important pathway to consolidating basics.

I add much more repetition. (Q#4)

When teaching a new sound I tend to use repetition since I have noticed that this method helps my students to concentrate and interact during the learning/teaching process. (Q#30)

I always tell my pupils with dyslexic characteristics to go over ALL the cards they have; recycling the information over and over again helps them bring it from short to long term memory. (#6)

Three teachers (#5, #9, #15), expressed a positive response to the incorporation of multi-sensory teaching into their repertoire and felt that their creativity was also stimulated.

I base my entire lesson on success and multisensory learning. There is no other way in my opinion. (Q#5)

Teaching of beginning reading – phonemic awareness, phonics, multi-sensory techniques and creativity. (Q#15)

Three teachers (#16, #26, #52) came to the realization that consolidation of letter/ sound correspondences was the foundation to decoding.

When I work with the pupil with dyslexic characteristics, letter/sound correspondences is my main concern. (Q#16)

The reason that children with dyslexic characteristics have difficulties is because they are not able to make grapheme phoneme correspondences. That is why the EMPI method is very effective. Quick retrieval is the key to early reading. (Q#52)

One teacher (#7) also emphasized the importance of breaking down the material into comprehensible smaller units.

I have found that children with difficulties take longer to internalize new material and so I teach one sound and work intensively around that, until I am sure all the students have "got it". Then I move one. I break down all new material into smaller units and gradually build up to more difficult and longer exercises/reading. Children need to feel on top of material at all times. (Q#7)

Two teachers (#16, #25) innovated the use of phonics into their junior high and high school classrooms. This is important since they were trying to re-teach beginning reading at a later stage at school. A process that has not been attempted in the past.

I work mainly with junior high and high school pupil, so first I work on vowels, vowel pairs and diphthongs and then we turn to the other orthographical patterns which the pupils are unfamiliar with. (Q#16)

I integrate phonics, syllables division and phonemic awareness in my three and four point classes. (Q#25)

It seems that the teachers adopted specific changes in their practical application to teaching as a result of the programme. They consolidated grapheme/phoneme correspondences by using a multi-sensory approach to reading which is both success orientated and repetitive. In addition, they are able to re-teach “non-readers” at the junior high school and high school level which shows that the process of PD that they have undergone left an impact on their teaching.

Application to general population

An unexpected impact of the programme was the application of the phonics approach to the general population of students, in addition to using it with pupils with dyslexic characteristics. Fifteen teachers described how they applied the newly acquired practices to the general population of students. They made a direct application of the new teaching practices they acquired to the regular classroom situation, and in that manner found solutions to difficulties in the main-stream classroom.

Many mainstream pupils benefit from a phonics programme. (Q#3)

The programme taught me the way to improve on my teaching skills when teaching to read. The various methods that can be used for all children. (Q#5)

I always teach reading using the systems I learnt on the programme, also with regular pupils. (Q#51)

Two teachers (#1, #42) specifically said that they taught regular students as if they were teaching students with dyslexic characteristics.

I teach beginning reading as if I was teaching kids with dyslexic characteristics. (Q#42)

I teach all my students as if they were students with dyslexic characteristics. In a foreign language because a student's oral language is limited, strategies used to teach beginning reading to students with dyslexic characteristics are beneficial for all students. (Q#1)

Further, two teachers (#59, #60) found the approach helped them cope with the needs of their weak students in the regular classroom.

I now know how to help weaker students in my regular classes. (Q#59)

I took a class of non readers (at least most of them) and used the system. (Q#60)

Two teachers (#14, #61) went a step further and used the methods in their regular junior high and high school classrooms.

I also apply it to my older pupils to improve their reading and strengthen it. (Q#14)

Because I teach in high school, before the programme I had never taught beginning literacy. I find myself using methods, ideas and games in classes I teach and even with regular but difficult students to be a great success. (Q#61)

It is apparent that teachers made a direct application of the EMPI programme to their students in their regular classrooms. They found that these methods worked well for both students with dyslexic characteristics as well as regular EFL learners and enabled them to cope with the difficulties of weak learners at all levels.

In sum, in line with the CF of this research, the teachers reported applying many aspects of the knowledge they gained in the EMPI programme. Most of them answered positively when directly asked about specific aspects of phonics, and elaborated on their application in both general and specific terms. They gained practical solutions for the teaching of reading and used these practices in their regular classrooms as well, far beyond the students with dyslexic characteristics.

5.4.5 Student Outcomes

Student achievement and student sense of self efficacy were not an integral part of this research and were not measured directly. However, they are an integral part of the CF and have emerged from the teachers' descriptions, as interesting evaluations of the process of professional change.

<u>Student achievement</u>

Nine teachers chose to describe the change in the academic achievement of the students, as a result of the application that the teachers made of the knowledge gained in the programme. They considered the learning outcomes of their pupils to be the yardstick of their success as teachers and the essence of what they were expected to achieve professionally. Once they underwent the programme they felt that they owned the practical tools which brought about improved academic achievement in their students.

They were able to reach the full spectrum of the student population and move them ahead.

I can see changes in children who claimed that they were not able to read or understand English. (Q#60)

Almost all my pupils can read (at least decode), even the weakest ones, and I love the results. (Q#64)

Fortunately the programme provided me with the tools that are designed for such pupils and now using them the results speak for themselves. (Q#16)

I gained some valuable tools for students with dyslexic characteristics and saw the fruits. (Q#44)

They also said that the programme had deepened their insights into the reading process and subsequently they witnessed better results.

Using phonics as the method of instruction is more successful for the learner. (Q#51)

I learnt what reading is and that with the correct approach students with dyslexic characteristics can learn to read. (Q #53)

One of the teachers (#29) went as far as to recommend the programme to other teachers as the means to improve their students' reading outcomes.

I really enjoyed the programme and I would recommend it to any English teacher who wants to improve her students' reading and help students with special needs. (Q#29)

Finally, half of the participating teachers reported that they were monitoring the reading progress of the children with graphs or charts. This reflects a significant innovation because in the past teachers did not monitor progress.

In sum, as a result of their participation in the programme teachers underwent professional changes. Their insights into the understanding of the reading process improved and the application of newly acquired practices enabled them to teach more

effectively. Consequently, they saw that the students learned how to decode efficiently and success was felt by both teacher and students.

Student sense of self efficacy

As noted above, a change was observed by the teachers in the students' achievement levels. In addition, seven teachers described the resulting change in their students' sense of self efficacy. They were aware that students at risk undergo a negative learning experience which leads to a sense of failure. As a result of student failure the teachers sought a solution to bring about better student outcomes. They realized that the underlying principles of the EMPI programme taught by a professional teacher take the student through a success orientated process which not only improves student academic attainment but boosts student self efficacy. They adopted a structured, cumulative approach which led to a feeling of success at the end of every session and strengthened the sense of self efficacy of the students.

Professional teaching encourages them (pupils with dyslexic characteristics) to believe in themselves and their abilities thus bringing them to success. (Q#3)

Recycling of the material allows the students to feel successful. If they go over the material again and again, they WILL remember. (Q#6)

Two teachers (#40, #58) emphasized the importance of building up self esteem using success orientated materials in a positive learning environment.

For students with dyslexic characteristics for sure, teachers must use success orientated materials because it raises the students' self esteem and makes them feel good about themselves and about the learning process. (Q#40)

Three teachers (#30, #35, #52) used the term of self confidence as an additional word to describe the importance of successful learning outcomes.

I think that teachers should start teaching using easy material. This encourages the students to keep up with the material and provides them with more self confidence. (Q#30)

When a child realizes that he/she has read a book this gives a tremendous sense of self-confidence. (*Q#35*)

In other words, the teachers contended that a success orientated learning experience strengthens a student's feeling of self esteem and strengthens self confidence bolstering the sense of self efficacy. Successful student attainment is the direct outcome of the process of PD after knowledge and practices have been consolidated.

5.4.6 Change in Teachers' Beliefs

The sequence of the impact of the process of PD goes from knowledge acquisition to change in practices, to improved student outcomes, leading to a change in beliefs as described in this section.

In response to a direct question regarding the extent to which the programme has changed their beliefs about teaching, most teachers responded positively. Almost two thirds of the teachers (N=40, 62%) reported that their beliefs about teaching changed to a large extent, and close to 30% of them mentioned some change (N=18, 28%). Only six teachers claimed a small change (N=3, 5%) or no change (N=3, 5%). In their answers to the open question the teachers described general changes that occurred in their beliefs, specific changes, and the confirmation of beliefs they already had.

<u>General changes in beliefs</u>

Eight teachers related to the general changes that occurred in their beliefs. It is apparent from the responses that during the programme the teachers underwent a process which brought about changes in their beliefs. They felt that changes were not superficial but deeply ingrained and have led to a different understanding of reading and its instruction. The programme furnished them with answers to the difficult situation they were facing in the field and confirmed that reading can be taught to every pupil or almost every pupil.

My beliefs have changed because I really believe now that reading can be taught to almost every child. (Q#29)

I got a deeper and systematic approach to the whole process of teaching beginning reading. I began to feel it as a "process". (Q#47)

The programme has changed my attitude. (Q#63)

Three teachers (#2, #20 #48) described how their attitude to their students changed in the programme.

My whole attitude was different when I approached my pupils after the programme. (Q#48)

Taking this programme has tremendously changed my whole attitude, even the way I regard every student in my classes. (Q#2)

There is a need to adapt to different students. (Q#20)

An important outcome from the programme was the change in their beliefs about the teaching of reading and the understanding that every child can be taught to read if the correct approach is used. This is reflected in the responses of three teachers (#29, #47, #53).

I learnt what reading is and that with the correct approach students with dyslexic characteristics can learn to read. (Q #53)

That is, the programme provided answers to the difficulties facing EFL teachers of beginning reading in the field. In the most part, their beliefs about the essence of the reading process changed, their attitude towards the students changed, particularly those with difficulties, and many realized that every child could be taught to read if the correct approach was utilized.

<u>Specific changes in beliefs</u>

Ten teachers not only noted there was a change in their beliefs, but detailed the specific changes that occurred as a result from the programme. They were exposed to a phonics approach to reading which had been ignored in the past, both in their pre-service training

at college, and as students in elementary school. Consequently, problems had arisen in the field. Knowledge of how to teach reading using a phonics method provided practical answers to many of their difficulties. This was an important innovation that led to specific changes in their beliefs.

I am convinced that kids need a very strong basis in phonics. (Q#34)

As I understand and believe that reading means decoding signs which represent sounds and meanings, phonics seems the right approach. (Q #9)

Four teachers (#12, #29, #47, #52) confirmed how certain aspects of the phonics teaching approach consolidated basic word recognition.

Two of them described their belief in the importance of constant reinforcement and repetition, structure, and over-teaching of material.

Children with dyslexia need constant reinforcement. I found that even after short breaks from school I need to recycle and sometimes re-teach material. (Q#12)

Since I have participated in the programme I really believe in teaching reading in a very structured way using lots of repetition. (Q#29)

Another teacher (#47) described her belief in the importance of using success orientated materials to accelerate motivation.

It is necessary to supply the child with success orientated materials. Only this way we can keep the children, particularly children with dyslexic characteristics, motivated. (Q#47)

Further, another teacher (#52) came about to believe that sounds must be taught in an explicit cumulative manner.

In order for the student to learn it is important to assess him/her properly and subsequently work step by step to reinforce the letter sound correspondences. (Q#52)

Other newly acquired beliefs were mentioned by the teachers. One teacher (#30) expressed the need to be creative.

I believe that teachers in general have to be skilful, innovative and creative. Because I work with such pupils, I believe that I have to be much more creative in order to reach these pupil's minds, attitudes and interests. (Q#30)

Another teacher (#41) found that as a result of taking the programme she had heightened her awareness of the special needs of certain students.

In the past I took my students 'for granted'. After taking the programme I became much more aware of certain students' special needs and take these into account while teaching. (Q#41)

It is apparent that teachers underwent various specific changes in their beliefs as a result of the process of PD. The programme enhanced their knowledge and practices. As a result they came about to believe in the importance of using a structured, explicit and success orientated approach, in being creative, and in being aware of the special needs that had to be accounted for while teaching.

Confirmation of beliefs

Many teachers noted that their beliefs have changed, as described in the previous section, and fourteen other teachers indicated that that the programme has confirmed their beliefs about teaching beginning reading. These teachers felt that the phonics approach to teaching beginning reading led to good results. Their beliefs were mainly based on intuition. The programme confirmed their beliefs and provided them with the assurance that they were working correctly.

I started off with the whole language approach but I always felt the need to teach phonics too. (Q#37)

I have always believed in phonics; the programme has strengthened my beliefs. (Q#6)

Since I am not an elementary school teacher I have never had to teach reading systematically. But when I was asked occasionally to do so, intuitively and without knowing I used phonics, meaning grapheme – phoneme correspondence, because that is how I remember I had been taught myself as a pupil. (Q#16)

My beliefs have not changed but now I know WHY and HOW to do it. (Q#17)

Six teachers (#3, #17, #18, #19, #34, #43) said that the programme confirmed that their success orientated teaching was correct and provided them with the tools (How) to teach effectively. They received an affirmation that they were working correctly.

Because I've been doing this kind of teaching for years I wanted to see if I was doing it right. I found I wasn't far off. (Q#19)

The programme has given me tools I didn't have before but it didn't change my beliefs or attitudes to the teaching of beginning reading. (Q#43)

Two teachers (#10, #41) said that the programme confirmed that all students can learn to read English, including the population with dyslexic characteristics.

I believed and still believe all students can learn to read English. (Q#41)

It reinforced my gut instinct, that students with dyslexic characteristics are not stupid and incapable but have a problem which can be taken care of. I stand up for them and their rights and so does my entire staff. (Q#10)

In short, the programme confirmed existing beliefs of some of the teachers. They sensed that the phonics approach was the correct method to use for beginning reading instruction, and were reassured. The programme broadened and refined their beliefs about how to teach and provided the tools. The belief that the full spectrum of learners can be taught how to read was confirmed as well.

In sum, most of the participating teachers reported that their beliefs have changed as a result of change in practices and improved student outcomes. Some noted that their beliefs about the teaching of reading and dyslexia have changed, while others noted specific areas of change. These include the importance of using a structured, explicit and success orientated approach and, taking into account the special needs of the students. Other teachers intuitively felt that phonics was the right approach, or they had been taught according to its rules, and their beliefs were confirmed.

5.4.7 Summary of Results of Question 3

In sum, the process of PD was initiated by a sense of negative self efficacy. This instigated the teachers to look for a framework that would provide an efficient process of PD and solutions to the high failure rate of readers with dyslexic characteristics and struggling readers. The process ended with the teachers' feelings of positive self efficacy. Many were working with innovations in the field of dyslexia and coping successfully with their students' difficulties. This change from negative to positive self efficacy was the outcome of the process of PD, involving the acquisition of knowledge, change in practices , improved student outcomes and changed beliefs about teaching students with dyslexic characteristics. The final outcome was the teachers' positive feelings that they were equipped with effective means to teach the full spectrum of students.

5.5 Summary of Findings

The research questions focused on the impact of the process of PD on the participating teachers. They first dealt with the incentives of the teachers to join the programme, i.e., their negative self efficacy and need for a process of PD. Then, change in content knowledge was examined. Furthermore, the teachers' perceptions of the process of PD and its impact on them were analyzed including change in self efficacy, the process of PD, knowledge acqusition, change in practices, improved student outcomes and change in beliefs.

The conceptual framework that was developed for this research was based on the integration of three models of PD (Guskey 1986, 2002; Ingvarson, Meiers and Beavis, 2005; Garet, et al., 2008), two models of literacy acquistion (Ehri 1991.1994.1995, 1998,1999,2002,2005; Adams, 1990,2003) and the innovative addition of the process of change from negative to positive self efficacy. As previously described Guskey's model of teacher change (1986, 2002) claimed that if teachers try out new teaching practices and see improvement in student attainment, their attitudes will change. Ingvarson, Meiers and Beavis's (2005) model of professional development distinguished four different aspects of impact which were the result of professional development. They include impact on teachers' knowledge, impact on teachers' practices, impact on student learning outcomes,

and impact on teachers' efficacy. The Theory of Action for Early Reading PD Interventions Study (Garet, et al., 2008) described three structural and three core features which bring about improved teacher knowledge which also change practices, resulting in improved student outcomes.

The results of the data, collected with a pre-post questionnaire, a self report professional development questionnaire, and four unstructured interviews, were analysed in accordance with the framework described, as well as inductively to allow for new categories and sub-categories to emerge.

Incentives for joining the programme - negative self efficacy

The teachers' search for a PD programme was generated by their negative sense of self efficacy. The results show that the teachers were concerned with teaching students with dyslexic characteristics how to read, as well as their own professional growth, as student attainment was of utmost importance to them. Due to inefficient teaching practices the teachers felt they were not fulfilling their professional objectives. Their frustration led them to find an alternative in the form of the EMPI professional development programme. This reflects their commitment to their profession and students. They took their job seriously and did not shirk their moral commitment or professional responsibility.

Change in knowledge

The quantitative results show a significant increase in knowledge which is the basis to any process of PD. The teachers increased their basic content knowledge needed for teaching the essentials of beginning reading. However, the knowledge of spelling rules and its application did not improve enough and needs further emphasis.

Teachers' perception of the impact of the process of PD

The teachers underwent a process of professional growth and significant impact was left on their professional selves and teaching practices. An important outcome was the fact that teachers felt their self efficacy had been boosted from negative self efficacy to positive self efficacy. They were able to apply practical tools in the classroom and felt

qualified to make professional decisions related to reading problems and promote their students' academic attainment. Many have continued the process of professional development after completing the programme, and have been working continuously to promote the field of teaching students with dyslexic characteristics.

The majority of teachers carried on teaching students with dyslexic characteristics and several wrote their own reading programmes. Some even taught programmes related to dyslexia within an academic framework. Furthermore, the programme left an impact on the participants enabling them to provide better tuition and enhancing their understanding of dyslexia. They felt dual impact on their professional and personal lives. Due to the fact that on-going learning was considered an integral part of their personal selves, teachers carried on studying in areas related to dyslexia. Some have taken up a position of authority in the field of dyslexia in their schools and established learning centres as well as providing assessment.

The participants reported that they experienced an overall gain in knowledge. The phonics approach to beginning reading has been adopted by them and both phonemic awareness and fluency have been incorporated into their teaching repertoires. More attention is being given to spelling. A great deal of emphasis is still placed on vocabulary acquisition which is a very important aspect of the EFL teachers' methodology.

The acquisition of a comprehensive subject matter basis (content knowledge) has led teachers to report that they were teaching better. This has also enabled the teachers to justify their methodology. In addition, their increased knowledge has brought about improved organization and presentation of materials in both a remedial framework and the regular classroom. They have also deepened their understanding of the difficulties facing students with dyslexic characteristics and increased their empathy and sensitivity of students at risk.

The teachers acquired and applied practical solutions to teach beginning reading. They internalized and consolidated specific practices behind the rationale of intervention. These include small units of knowledge, taught with a multi-sensory approach through consistent repetition at the level of the student, cumulative teaching, and the use of

success orientated materials. Teachers made a successful, direct transfer from the intervention situation to the regular classroom environment.

The programme provided deeper insights as well as practical tools to the teaching of beginning reading. This led to better student attainment as a result of improved teaching as well as the ability to teach the full spectrum of diverse learners. Noteworthy is the finding that about half of the teachers adopted the important innovation of monitoring the students' reading progress. Bolstering the students' sense of self efficacy was the result of the rationale of providing success orientated material behind the EMPI programme.

Teachers' beliefs underwent change because the programme provided tools to teach all pupils to read, even those at risk. The practical application of an explicit, structured phonics approach to all students either changed the teachers' beliefs or confirmed them. They realized, or were reassured, that every child could be taught to read. They came about to believe, or their beliefs were confirmed, in the importance of using a structured, explicit and success orientated approach, in being creative, and in being aware of the special needs that had to be accounted for while teaching. The teachers have undergone a noteworthy process of PD that started off with a negative sense of self-efficacy and ended with a positive one, gaining knowledge, practices, and different beliefs along the way.

The results confirm that the programme has left an impact on the professional development of the teachers. The main incentive for participation was activated by a negative feeling of self efficacy and the desire to improve the academic attainment of students with dyslexic characteristics. Teachers acquired the knowledge to teach efficiently and felt confident enough to make professional decisions, which they applied to their teaching practices, both in the regular classroom and intervention framework. Their beliefs about teaching reading changed. They progressed professionally by furthering their studies in the field and obtaining further academic qualifications. The teachers underwent a process of PD beginning with negative self efficacy and culminating in positive self efficacy.

In the next chapter the significance of the impact of these findings on knowledge and other areas of impact leading to professional development is discussed.

6. Discussion

The main purpose of the research was to evaluate the PD of the teachers who participated in the EMPI programme. The conceptual basis of the research was based on the integration of three models of PD with two models of the acquisition of reading, with the addition of the concept of change from negative to positive self efficacy. The results showed that the teachers underwent a process of PD and increased their knowledge of reading acquisition.

This chapter follows the order of the three research questions. It starts by discussing the incentives of the teachers to join the programme, i.e. their negative self efficacy, and proceeds to a discussion of the aspects of the teachers' knowledge that changed. A discussion of the process of professional development the teachers underwent follows, including the change from negative to positive self efficacy, the teachers' perceptions of their professional development, changes in knowledge, teaching practices, student outcomes and teachers' beliefs. The chapter concludes with the limitations of the research.

6.1 Research Question #1

6.1.1 Incentives for Joining the Programme

The results of the research showed that the main incentives for participating in the programme were related to the need for PD in order to change the teachers' negative self efficacy. The teachers realized that they lacked the necessary skills and knowledge and that they needed a framework of professional development that could provide solutions to the problem. Guskey’s model of teacher change (1986, 2002) states that improvement in student attainment can be achieved after teachers change their classroom practices. This accords with the Theory of Action for the Early Reading PD Interventions Study (Garet, et al., 2008) which showed that if teachers undergo professional development their knowledge will increase leading to changes in practices which eventually improve student attainment. Therefore, most of the answers of the teachers regarding their

incentives for participating in the programme related to different aspects of the process of professional development. Personal motives or satisfaction were of secondary importance.

The main incentive for joining the programme was the desire of the teachers (86%) to learn how to teach beginning reading to children with dyslexia or those at risk. At risk students need to be taught in ways that will meet their instructional needs (Minskoff, 2005). Their feeling of inadequacy left them with a feeling of incompetence and the desire to become better teachers. This is supported by the opinion that the skilful knowledgeable teacher is the key factor in improving student attainment (Darling-Hammond, 2000; Putman, Smith and Cassady, 2009). They looked for a framework that could provide them with the solutions they needed. Professional development was indeed the answer for them as it has been found to improve classroom instruction and to bring about improved student attainment (Little, 1993; Darling-Hammond and McLaughlin, 1995; National Commission on Teaching and America's Future, 1996; Pearson, 1996; Elmore, 1997; Corcoran, Shields and Zucker, 1998; Ball and Cohen, 1999; Cohen and Hill, 2000; NRP, 2000; Supovitz, 2001; Desimone, et al., 2002). Likewise, the study carried out by Ingvarson, Meiers and Beavis (Ingvarson, Meiers and Beavis, 2005; Meiers and Ingvarson, 2005) found that PD left an impact on teachers' efficacy, practices, knowledge, and student attainment. The EMPI programme had a positive effect on the teachers in these four areas because it contributed to their teaching which was the teachers' main incentive for joining.

The reality was that teaching beginning reading caused many difficulties for the participating teachers who were expected to adhere to the official approach of whole language (Goodman, 1965, 1967, 1970, 1976, 1986, 1992). Far too many seventh graders were unable to decode efficiently. Junior high school teachers had never been trained to teach beginning reading and no one had the tools to instruct them and bring them up to standard. Many students were being diagnosed with dyslexia even though studies showed that the problems are the result of inadequate instruction or problems learning rather than neuro-developmental difficulties (Clay, 1987; Vellutino, et al., 1996; Vellutino, Scanlon, Small and Fanuele, 2006).

Teachers decided to take responsibility for their own professional development as they were feeling negative self efficacy, and became "*designers of their own personal programmes or self directed professional development*" (Clark, 1992, p.75). Since the Ministry of Education provided no in-service training or practical solutions to the difficulties being faced in the field, they were left to their own devices. Results of this research showed that 53% of the teachers reported that they were using a combination of both the phonics and whole language approach, 16% were teaching phonics, 9% whole language and 22% used their intuition to provide solutions to the teaching of beginning reading.

Studies have indeed shown that the phonics approach meets the needs of struggling readers (Eskey, 1992; Swanson, 1999; Carnine, Silber, Kame'enui and Tarver, 2004; Purdie and Ellis, 2005). Furthermore, Eskey (1992) claimed that EFL students need a basis in phonics since educated guesses cannot replace accurate decoding. Accurate decoding was further found to be a strong predictor of reading performance in L2 (Koda, 2005). Consolidation of basic reading skills leads to good comprehension (Birch, 2002). However, this area had been neglected over the years (Kahn-Horwitz, Roffman and Teitelbaum, 1998) and the Matthew Effects described by Stanovich (1986) were becoming apparent. The teachers looked for an alternative solution within the framework of PD, to improve the student attainment and for that reason joined the programme.

6.1.2 Negative Self Efficacy

A teacher's sense of self efficacy has far reaching effects (Tschannen-Moran and Woolfolk Hoy, 2001). A sense of negative self efficacy was the central reason for participating in the EMPI programme. The teachers were looking for a programme that would provide them with the practical tools which could bring about improved educational outcomes that were badly needed since they experienced negative self efficacy. Goddard, Hoy, and Woolfolk Hoy (2004) describe self efficacy as the significant predictor of teaching practices that are productive. The teachers were frustrated as their students continued to fail despite their efforts to improve their reading. The teachers felt that they were not fulfilling their teaching objectives and tried another

option. Researchers connect self efficacy with student achievement as well (Armor, et al., 1976; Gibson and Dembo, 1984; Andersen, Greene, and Loewen, 1988; Ashton and Webb, 1986; Moore and Esselman, 1992; Ross, 1992, 1994). The teachers knew that they had to make a stronger impact on their students' reading ability. Bandura (1993) and Ross and Bruce (2007) say that a strong feeling of efficacy adds to a person's feeling of success or achievement. The teachers' lack of personal accomplishment left them with a feeling of frustration and negative self efficacy. They needed to confront the situation and find successful teaching practices which would in turn reverse their negative feelings.

The findings of Fritz, Miller-Heyl, Kreutzer and MacPhee (2001) and Yost (2002) showed that an increase in the teachers' self efficacy is connected to teacher training. In this research the teachers concerned were in-service teachers and the framework of professional development given after their working hours in school seemed the best way for them to achieve their goals. Professional development was not given at the school itself since the number of English teachers on the staff was very small (sometimes only one or two teachers) and therefore a different framework was required. The model which these teachers adopted differs from the model described by Garet, et al. (2008) that advocates in-school professional development programmes where fellow teachers and school personnel help one another. This support helps teachers to deal with difficult learning processes and brings about changes in practices as shown by other researchers (Talbert and McLaughlin, 1993; Ball, 1996; Knapp, 1997; Elmore, 2002). Their negative self efficacy called for a change in their practices in order to bring about improved student attainment which is described in the literature (Guskey, 1985; Joyce and Showers, 1988; Kennedy, 1998; Hawley and Valli, 1999; Cohen and Hill, 2000).

They acknowledged the difficulties but showed resilience when things did not go as they had anticipated initially, and sought ways to bring about change. A similar process is described by Tschannen-Moran, Woolfolk Hoy and Hoy (1998), supporting Bandura's (1977) social cognitive theory claiming that a teacher' self efficacy beliefs are connected to the effort put into teaching, the goals that are set, the persistence to find solutions when things do not go according to plan and the resilience to overcome set backs.

In order to modify the reality they were working in the teachers turned to a PD programme that they believed could bring about a change in student attainment and could alter their negative self efficacy. The need to acquire positive self efficacy was very important and change was the only way to turn around the negative learning outcomes in the field at the time. Positive self efficacy is imperative since it affects the amount of effort teachers are willing to put into their teaching, and what they aspire to achieve. (Woolfok Hoy and Burke Spero, 2005). The teachers in this research were perceptive enough to understand that their teaching success was dependent on the individual teacher's decision to bring about changes and to do it through the framework of professional development.

6.1.3 Commitment

The most significant finding reflected in the unstructured interviews was the individual teacher's commitment to their pupils' successful acquisition of English reading. It was also supported in the open ended questions. It should be noted that commitment is an issue that emerged from the interviews and was not a-priori set as a goal for this research. Its centrality has become clear in data analysis. Student attainment was found to be a major concern of committed teachers (Firestone and Rosenblum, 1988) and they were found to believe that they can make a difference to both their students' lives and take responsibility for their learning outcomes (Nias, 1981; Dannetta, 2002; Elliot and Crosswell, 2002; Park, 2005; Sammons, et al., 2007). Guskey's model (1986, 2002) of PD places student outcomes as the intermediary connection between change in practices and change in attitudes and beliefs. Furthermore, student learning is one of the areas of impact left by PD (Ingvarson, Meiers and Beavis, 2005; Meiers and Ingvarson, 2005) and was also found to be the final outcome of the Theory of Action for the Early Reading PD Interventions Study carried out by Garet et al. (2008). Commitment proved to be a basic characteristic of this cohort of teachers and they expressed it freely.

The teachers felt guilt and dissatisfaction together with a determination to make changes. This has been described as characterizing committed teachers who care and take their jobs seriously (Elliot and Crosswell, 2002). The commitment of teachers working with

disadvantaged or struggling students is constantly being challenged (Day, et al., 2007) therefore the teachers in this research seem to have been determined to face the difficulties and provide solutions.

Autonomy is an integral part of creating commitment to student learning (Rosenholtz, 1989) since it is central to internal motivation (Deci and Ryan, 1985). This research reflected an autonomous process based on the individual desires of the teachers to change the picture of reading outcomes in their own classes. The teachers could only depend on themselves, thereby creating commitment as described by Firestone and Penell (1993) which involves the experiencing of responsibility for the outcome of one's work.Their own intrinsic values created the need to improve student attainment as found by Bredson, et al. (1983) as well. The choice to undergo PD was an individual decision with no backup from the school, the English Inspectorate or the Ministry of Education. That is, there was no organizational commitment (Mowday, Steer and Porter, 1979, 1982), and the teachers joined the programme because of a personal desire to change an existing reality, rather than due to a commitment to an organization whose values they believed in and a desire to stay there.

Their commitment was heightened once they saw student improvement, a finding described by other researchers (Bredson, Fruth and Kasten, 1983; Rosenholtz, 1987, 1989; Rosenholtz and Simpson, 1990; Kushman, 1992; Raudenbush, Rowan and Cheong, 1992). The importance of student outcomes is the main goal of any PD programme (Guskey, 1986, 2002; Ingvarson, Meiers and Beavis, 2005; Meiers and Ingvarson, 2005; Garet, et al., 2008).

The literature has shown that teachers' commitment is a predictor of how well teachers function on the job and the quality of education they provide (Tsui and Cheng, 1999). When students succeed the teacher can attribute the success to themselves (Firestone and Penell, 1993). Consequently, commitment is intertwined with responsibility to the school or organization one works for, the profession and the students (Firestone and Pennell, 1993). In the case of this research teachers emphasized their students' needs and outcomes as their top priority but did not mention their obligation directly to the school.

Furthermore, these teachers emphasized the moral obligation they felt towards the teaching of English. They considered the ability to read English, not only as an educational objective but as a skill that could ensure their students' success in the modern world. Failure to achieve this important objective left them with the feeling of negative self efficacy and inability to fulfil their main responsibility. This was verbalized in the unstructured interviews and the open ended questions. They believed in their desire to make changes and turned to the EMPI programme to make this happen. Firestone and Rosenblum (1988) also explained that the committed teacher can influence an existing situation by making a difference. This is what the teachers in the current research were looking for, and, based on the literature, were capable of achieving.

The teachers in this research were determined to change their situation and expressed their satisfaction from the programme when they saw improvement in their students' educational outcomes. Positive commitment leads to better work performance and improvement in student attainment (Graham, 1996; Louis, 1998) so that the overall standard of education will improve. The new practices learned on the programme left the teachers with a feeling of positive self efficacy and improved confidence. This led the teachers to become more committed to their work which was also found by Maeroff (1988) and Lichtenstein, et al. (1991).

Although other studies have shown that teachers' commitment decreases with time (Huberman, 1995; Fraser, Draper and Taylor, 1998) the unstructured interviews that were carried out as part of this research with four teachers who had a minimum of ten years experience in the field showed otherwise. The responses of these teachers showed that despite many years of teaching they were highly motivated to participate in the programme because their commitment to their profession and their pupils' attainment was top priority and their work satisfaction meant a great deal to them. This high commitment was expressed by other teachers who participated in the programme as well, in the answers given to the open questions. Firestone and Rosenblum (1988) explain that professional commitment is related to a positive attachment towards one's work. Organizational commitment is when an individual believes in the goals and values of the organization that employs him/her, and effort is made for the workplace one has the

desire to stay in (Mowday, Steers and Porter, 1979, 1982). The respondents in this research were self motivated and thus their high level of commitment was being maintained because it was professional - internal rather than organizational - external. None of the interviewees expressed despair or a desire to give up or withdraw from the problematic situation. If anything they experimented with solutions. All four teachers reported that they returned to their classrooms and applied knowledge and practices they had acquired from the programme.

Park (2005) explains that not many studies have looked at the connection between teachers' commitment and the student's academic achievement since it is difficult to do so in a direct way. Studies that have done so show a partial and inconclusive picture (Firestone and Rosenblum, 1988; Rosenholtz, 1989; Kushman, 1992). This research showed that teachers' commitment is a relevant issue. The respondents felt a deep personal and professional responsibility towards their students' attainment because literacy in English is not only needed for academic success but is an important life skill in modern society.

In sum, the teachers in this research made an autonomous decision to participate in a process of PD in order to improve their teaching of beginning reading since they felt negative self efficacy. They chose to participate in this programme which impacted on their self efficacy, knowledge, practices and beliefs. Furthermore, it strengthened their commitment to their students' academic attainment and their moral obligation to teach them English.

6.2 Research Question #2

6.2.1 Change in Knowledge

As has been previously mentioned (See conceptual framework, figure 4) content knowledge is the first component of the process of PD that has to be consolidated. A pre test and post test were administered to the full spectrum of EFL teachers ranging from second year pre-service students to experienced in-service teachers. The aim of the questionnaire was to determine whether the respondents' content areas of knowledge

(concepts of phonics, knowledge of vowels, differentiation between syllables, phoneme count, syllable count, spelling rules, and terminology) improved at the end of the programme. A comparison between the results of pre-test and post-test shows that there was a meaningful increase in all the content areas as well as in the total knowledge score.

Understanding of content knowledge is a basic requirement for teaching a subject (Shulman, 1987). Pre-test results showed that both pre-service and in-service teachers were not familiar enough with terminology related to phonics reading instruction. They also lacked an understanding of the progression of sound combinations needed to teach beginning reading. Phonics enables the reader to decode unknown words, to internalize spelling patterns and to accelerate fluency (Mesmer and Griffith, 2005). Therefore, teachers need to have basic understanding of special features of the English language such as phonemes, spelling patterns in order to teach reading and spelling (Moats, 1994). The teachers acquired a basis in the underlying content areas of knowledge needed to teach the essentials of beginning reading. This section presents a theoretical context for the change in knowledge, and a discussion of each content area follows.

6.2.2 Theoretical Context for the Change in Knowledge

The complexity of English orthography requires a systematic phonics approach because it is deep, the spelling opaque and takes longer to consolidate (Geva and Siegel, 2000; Seymour, Aro and Erskine, 2003). A whole language approach was not enough to develop accurate word recognition skills and the students had gaps in their decoding ability which were never resolved. This is in accordance with the Matthew Effect described by Stanovich (1986) in L1. Therefore, they needed an explicit, multisensory, phonics approach to provide more effective practices. Sparks, Ganschow, Kenneweg and Miller (1991) have also recommended this approach as an effective medium of instruction in FL.

A significant increase in all aspects of knowledge of phonics, including knowledge and counting of syllables, and counting of phonemes, was noted. Without understanding and application of these concepts teachers will not succeed in teaching basic decoding (Moats, 1994). Four processors interact in the process of reading (Adams, 1990, 2003;

Moats, 2005). They include the orthographic processor which relates to letters and spelling of written language, the phonological processor which relates to speech sounds in spoken language, the semantic processor which relates to meaning and the content processor which relates to interpretation. The same cognitive and linguistic skills needed for the acquisition of literacy in L1 are needed in EFL (Hung and Zeng, 1981; Mann, 1986; Cossu, et al., 1988; Ganschow et al., 1991; Lundberg and Hoiem, 1991; Naslund and Schneider, 1991; Durgunoglu and Hancin, 1992; Bowers, 1995; Geva and Siegel, 2000; Sparks and Ganchow, 1991). That is, change has been noted in the basic knowledge needed to teach basic decoding and spelling. Teachers need to consolidate this knowledge because it serves as a basis for the teaching of systematic explicit phonics which brings about strong word recognition. A reader must be taught to make a connection between the letters in the spelling and the sounds of the pronunciation (Ehri, 2005). These skills are the basis for accurate and fluent reading that enable the reader to comprehend the print (Share and Stanovich, 1995; Adams, Treiman and Pressley, 1997; Rayner, et al., 2001). The teachers in this research were all EFL teachers and aware of the moral responsibility to teach their pupils to read English fluently. Strong reading proficiency is often the main reason for learning English (Carrell, 1992) and word recognition facilitates comprehension in English as a foreign or second language (Geva and Clifton, 1993; Koda, 2005).

The teachers had participated in a programme of 56 academic hours which taught a systematic phonics approach to beginning reading. It was to be expected that they had internalized terms such as phonics, phoneme, grapheme, phonemic awareness and multisensory. This shows that in almost all the areas their content knowledge improved. As the result of the process of PD the teachers had a solid basis to begin the teaching of phonics either individually or in their regular classrooms. Research has shown that basic lower level reading skills such as word recognition as well as higher level processes influence the ability of the EFL reader to be considered a skilled reader (Nassaji, 2003).

Further, results showed that knowledge across the content areas was interrelated at post-test more than at pre-test. That is, at the end of the programme, as teachers learned the essential components of beginning reading, their knowledge of phonics tended to

compose an integrated whole, more than at the beginning. If at the beginning they knew some and did not know some, by the end they tended to either know (in most cases) or not know. As the programme taught all the different content areas as parts of a whole, an integrated scheme was built in the teachers' knowledge. The interrelationships between the content areas back up the essential components of beginning reading and spelling. According to Ehri (2000) the same basis of knowledge is needed to learn how to read and spell. A teacher needs to have this knowledge and understanding to teach reading. Phonemic awareness and letter knowledge are predictors of reading skills (Snowling, 2004; Bowey, 2005; Byrne, 2005). Thus, once the teachers had learned the basis of this knowledge they will be able to teach efficiently.

6.2.3 Components of Phonics Instruction

Concepts of Phonics

The greatest increase in knowledge was seen in the area of concepts of phonics which is the basis to the application of a phonics approach to reading (the results went from 49.9 % to 72.1 %). Phonics instruction develops good word recognition skills (Perfetti, 1985; Feitelson, 1988; Adams, 1990; Chall, 1997, Snow, Burns, and Griffin, 1998; NRP 2000) and is supported by research (Chall, 1967; Adams, 1990, 2003; Johnston and Watson, 1997; Foorman, et al., 1998; Moats, 2000; Ehri, 2004). Throughout the year the teachers were exposed to these concepts. They learned to differentiate and name them and also to understand the logic behind the order in which they should be taught. The full range of learners, irrespective of their academic ability can learn how to read if systematic phonics instruction is taught (Chall, 1967, 1983,1996; NRP, 2000; Hatcher, Hulme and Snowling, 2004; Rose, 2006). The teachers consolidated their knowledge of the sound patterns in English and understood when they were used. This enabled them to teach their students to decode quickly and efficiently. Teachers need knowledge of phonics in order to teach it (Moats, 1995). They will be able to provide good examples in their teaching apply focused instruction and be able to understand and interpret their students' errors in reading and writing in relationship to the development of their language skills. Phonics is

the preferred method for teaching beginning reading in EFL (Eskey, 1992) and knowledge of concepts of phonics is essential for this purpose.

Significant changes were noted in areas that had not been part of the teachers' knowledge prior to the participation in the programme. They were unaware of a definition of the terminology related to phonics, and they were unable to recognize an example which represented a particular concept. For example, the term **blends** was a new concept and an increase from 43.5 % who answered correctly at pre-test to 87.1% at post-test was noted. Three other questions also showed meaningful improvement. They include recognition of a **diphthong,** a word with a vowel or consonant **digraph** the definition of a **long vowel sound** and **the schwa sound** (for definitions see appendix 4), as described below. Diphthongs: Only 15% of the teachers were aware of the concept in the pre-test compared with 51.7 % by the end of the programme. This result did not surprise the researcher, and better knowledge is still required beyond the 51.7%. During Grade 4 the basic sounds are taught but because of the complexity of the English orthography there is only enough time to teach the 26 letters of the alphabet and an additional few sounds. In Grade 5 teachers presume that children can read and almost no time is given to the teaching of complicated sound patterns such as diphthongs. The children are never taught these issues explicitly and consequently they are not internalized for spelling or reading. Children are expected to become proficient readers without enough explicit instruction and sufficient exposure and practice. According to Stanovich (1986) children need guided instruction at the initial stages of learning to read. Otherwise their ability to read will be inhibited and they will consolidate deficient decoding skills and lack reading practice. In order for the children to learn to read the teachers must acquire basic understanding of the structure of the English language and be able to teach it explicitly. This way essential reading and writing skills will be consolidated.

Vowel and consonant digraphs: The respondents also lacked understanding of the concept of a digraph. Only 13.7% initially recognized a word with a vowel digraph and 16.3% were able to pick out a word with a consonant digraph. By the end, 48.3% were able to recognize vowel digraphs and 57.8% consonant digraphs. These are sound patterns that are taught by teachers in the field, but nevertheless they lacked basic

recognition and understanding. The post test showed significant improvement, yet, still, better knowledge is needed. Ehri (1991, 1994, 1995, 1998, 1999, 2002, 2005) recommends explicit instruction which is taught systematically so that word recognition will be strengthened. About half to 60% of the teachers had acquired the knowledge to perform this important task.

The Schwa sound: Another example finding was the fact that teachers were unaware of the schwa sound (an unaccented syllable such as the first syllable in the word about). The teachers could not identify the schwa sound even though the word comes from Hebrew and is the sound of one of the vowels. 22.5% of participants could recognize it in the beginning and 50.0% understood the term in the end. Improvement in their knowledge can be noted here, and more is needed.

In sum, the overall knowledge of phonics improved and teachers deepened their understanding of the structure of the English language so that they could teach sounds that had been overlooked in the past. The general score had increased significantly to a satisfactory level, but several specific issues need further attention.

Knowledge of Vowels

The issue of long vowel sounds is especially important since differentiation between long and short vowels is an underlying principle of phonics. Prior to the programme most teachers knew that the English alphabet was made of vowels and consonants. They knew which letters represented the vowels. The additional knowledge that they acquired during the programme was the terminology of short and long vowels and a deeper understanding of the different variations of long vowels and their complexity, particularly for spelling. They were able to recognize a long vowel in a written word and showed improvement in this area (72.7%- 83.5%). However at the pre-test stage only 33.3% were aware of the fact that the long vowel sound is the same as the name of the letter, which improved to 60.3% at the post test stage. The names of letters help reinforce the sounds and provide cues for word identification (Ehri, 1980, 1983, 1991; Ehri and Roberts, 2006).

Teachers have to teach the differentiation between vowels from the beginning. They need this knowledge to teach their students to break the code (McCardle and Chhabra, 2004). PD that provides understanding of English word structure will enable teachers to teach better and the children will also improve (McCutchen and Berninger, 1999; McCutchen, et al., 2002; Moats and Foorman, 2003).

The teachers were also unfamiliar with concept of a vowel digraph (ai, ee, oa, ea,). At the pre-test stage 13.7% recognized a word with this combination which improved to 48.3 % after the post test. Due to the complexity of the English orthography this content area is here. When children learn to identify sound patterns in words they connect them to letter patterns thereby strengthening their insights into spelling (Medwell, et al., 2004). The teachers learned this and realized they had to organize the sequence they teach it since vowel digraphs are an integral part of the reading system but difficult to learn for spelling.

Differentiation between Syllables

Knowledge of syllable differentiation was moderate at the pre-test (63.9%) and improved remarkably (87.0%). Many children find reading longer words difficult and they must be taught to break words into recognizable chunks. For that purpose, the teaching of phonics places an emphasis on the differentiation of syllables. According to Ehri's Phase Theory of Sight Word Reading (1998, 1999, 2002, 2005) during the consolidated alphabetic phase the reader learns to read chunks of letters that recur in words and how to pronounce them. The student is taught to break multisyllabic words down into syllables and to recognize common affixes. Therefore, teachers need knowledge of syllable division so that their students can be taught to apply this skill (Ehri and McCormick, 1998). In the past this basic tool had been overlooked and pupils were expected to decode longer words intuitively or to guess. Many of them failed to do so and were left behind with very basic word recognition skills mainly of one syllable words. This led to the emergence of "non-readers" who never closed the gap and is known at the Matthew Effect described by Stanovich (1986). Teachers did not discern between open and closed syllables and consolidated this knowledge during the PD programme. 52.7 % of the respondents knew

what an open syllable was but showed improvement by the end of the programme when 84.5 answered correctly. The programme taught them to incorporate syllable division into their teaching repertoires so that they could encourage their students to strengthen their word recognition and spelling skills and be able to read and write multisyllabic words. Consolidated – alphabetic readers use larger chunks of letters such as syllables when they read (Ehri and McCormick, 1998). This understanding is important since it enables the novice reader to decode longer words correctly. Without this basic tool it is difficult for the beginning reader to move ahead and read words with two syllables and more.

Phoneme Counting

Knowledge of phoneme counting was quite low at the beginning (48.7%) and increased significantly (61.0%). The post test score was not as high as the result for terminology or phonics, but better than the score for spelling. Pre- school children and novice readers in Grade 1 who master phonemic awareness and are able to count the number of phonemes in a word will learn how to read (Share, Jorm, Maclean and Matthews, 1984; Bus and van Ijzendoorn, 1999; NRP, 2000; Ehri, et al., 2001). Therefore, phonological awareness, particularly phonemic awareness, is an important pre-requisite for beginning reading. Sight word recognition is reinforced by the ability to analyse the phonemic structure of words and to connect it to the grapheme phoneme correspondences (Ehri, 1992; Rack, Hulme, Snowling and Wightman, 1994; Stuart, Masterson and Dixon, 2000). This was a totally new area of knowledge that the teachers had to internalize, since they had been using a whole language approach with a major emphasis on global reading.

As phonemic awareness is "*the ability to focus on and manipulate phonemes in spoken words*" *(*Ehri, 2002, p.111), it is a prerequisite to reading. An important innovation of the programme was heightening the understanding of the importance of phonemic awareness. Success in reading and spelling is boosted if children consolidate phonemic awareness before the commencement of formal reading instruction (Lundberg, Frost and Petersen, 1988). Teachers had to learn to count the correct number of phonemes in words. This was a skill they had never been exposed to in the past. They needed to be able to do this so that they could understand how to teach phonemic awareness properly. For example, the

word *mix* has 4 sounds. Only 14.4% knew this at the pre –test level but there was an improvement to 40%. The understanding that the letter x has two sounds was a new concept for the teachers. Although a significant improvement was noted in this area, more work is needed.

Hulme, Snowling, Carvalos and Carroll (2005) showed that there is a connection between phonemic awareness and the progress children make when they begin to learn how to read. This area had also been neglected in L1. If the students are not taught this skill in L1 then basic decoding and word recognition will be affected in L2 as well (Lesaux and Siegel, 2003; Chiappe and Siegel, 2006; Geva and Zadeh, 2006). The EFL teachers needed this knowledge to fill in basic skills which had been overlooked. Lower level reading skills are prerequisites to reading comprehension and must be taught in both L1 and EFL (Birch, 2002). In the opinion of the researcher the teachers did not show enough improvement in this area. It is uncertain whether the teachers had internalized the importance of this area of knowledge and whether they would incorporate it effectively into their teaching practices. Focused attention should be placed on phonemic awareness in the future.

Syllable Counting

Most teachers (72.9%) were familiar with the ability to count the number of syllables in a word, and still, a significant, though slight improvement to 79.4%, was evident.

Breaking words into syllables is a stage in the acquisition of phonological awareness, and beginner readers are able to manipulate spoken units that are bigger than phonemes (Liberman, Shankweiler, Fischer and Carter, 1974). Teachers intuitively knew how to break words into syllables, but needed additional knowledge about breaking multisyllabic words into separate syllables. According to Ehri and McCormick (1998) students need to recognize vowel nuclei and then be able to pronounce each vowel together with the adjacent consonants so that they are read as separate syllables. They were taught to recognize different kinds of syllables, and were shown how to apply this skill to decoding longer words. This was an innovation of the programme and area of knowledge which they had never been taught in the past.

Spelling Rules

The knowledge of spelling rules proved to be the weakest area of knowledge. This area received the lowest score in the beginning (38.4%), increased significantly, though not much, and was still the lowest at the end (45.2%). The knowledge of all four spelling rules in the questionnaire was low in the beginning. The Israeli school system does not provide explicit instruction in spelling and teachers do not know how to teach it systematically. Therefore, the weak results did not come as a surprise.

"*…spelling instruction underpins reading success by creating an awareness of the sounds that make up words and the letters that spell those sounds"* (Joshi, Treiman, Carreker and Moats, 2008-9, p.6). Despite this fact, research has shown that teachers lack the linguistic knowledge and skills in L1 that are needed for focused, systematic language focused reading instruction (Moats, 1994; Moats and Lyon, 1996; Bos, et al., 2001). An area that showed very little improvement in the current research was knowledge of spelling rules. During the early years of the programme spelling rules were mentioned but were not dealt with in depth. From the year 2000 instruction in spelling was included in the programme, and the current results show that even more attention is needed. The ability to spell (encoding) reinforces decoding and strengthens the awareness of spelling patterns and spelling sound relationships which are needed for reading and writing (Adams, 1990). As part of pre-service and in-service training knowledgeable teacher trainers should provide intensive instruction in spelling since it contributes to reading acquisition (Joshi, et al., 2009). Joshi and Carreker (2009) comment on the fact that although spelling is a critical component of literacy, teachers have neglected this skill. They are referring to L1 but the results of this research also show that this area is problematic. The respondents to this questionnaire included a broad spectrum of EFL teachers from second year pre-service students through to veteran in-service teachers. Despite the fact that time was devoted to the teaching of spelling the results reflected only a minor improvement.

Spelling is an integral part of reading but was obviously not taught long enough or well enough. Spelling rules were not taught in the past to either pupils in school or pre-service

teachers and very little attention was given to the teaching of spelling according to sound patterns. Instead, students were expected to learn vocabulary words according to themes such as animals, food or parts of the body, by memorizing the letter sequences. Visual memorization of words is not an effective way for learning how to spell (Treiman, 1993; Treiman and Bourassa, 2000; Caravolas, Kessler, Hulme and Snowling, 2005; Cassar, et al., 2005). The matriculation exam allocated as little as two or three points to spelling all in all. In the future, longer time should be devoted to the teaching of spelling and perhaps other ways of teaching spelling should be designed.

Terminology

The teachers' knowledge of terminology related to phonics also improved significantly from 56.6% to 73.0%. During the programme the teachers were frequently exposed to the terminology. Phonemic awareness was taught from both a theoretical and practical point of view. Geva and Siegel (2000) found that in addition to letter names, phonemic awareness is a basic essential pre-reading requirement in EFL or L2. Furthermore, the method of reading instruction taught was phonics as opposed to global approaches that had been used in the past. Both phonemic awareness and phonics should be taught intensively when the reading programme has been adapted to the needs of the EFL novice reader (Manyak and Bauer, 2008). The concepts of grapheme and phoneme were used all the time since the association between them forms the basis to decoding. The novice reader must be able to match graphemes to phonemes and then to blend the sounds into words. This is an integral part of word recognition (Marsh, Friedman, Welsh and Desberg, 1981; Frith, 1985; Seymour, 1997; Ehri, 1998). The EMPI programme applies a multisensory approach and it was also demonstrated and emphasized frequently during the programme. An explicit multisensory approach to intervention should be used to teach novice EFL readers (Kenneweg, 1988; Myer, Ganschow and Kenneweg, 1989; Sparks and Ganschow, 1991; Lesaux and Siegel, 2003; Vaughn, Mathes, Linan-Thompson and Francis, 2005).

In sum, as a result of the process of PD that the teachers underwent their knowledge increased in all the content areas. Better knowledge is still required in some areas. The

content knowledge that was taught is based on key concepts that Ehri (1991, 1994, 1995, 1998, 2002, 2005) describes as necessary in her Phase Theory of Sight Word Reading. This theory provides the basis to teach the essentials of beginning reading and spelling. Furthermore, the Parallel Distributed Processing Schematic of Reading that is described by Adams (1990, 2003) requires phonemic and orthographic knowledge as well as context and meaning in order to read and understand a word. The basis of orthographic and phonemic knowledge was taught to the teachers, and most of it was acquired quite well by them. They could convey it to their students correctly and teach beginning reading instruction effectively.

6.3 Research Question #3

6.3.1 Teachers' Process of Professional Development

Teachers in this research underwent a process of professional development. "*Professional development is considered an essential mechanism for deepening teachers' content knowledge and developing their teaching practices*" (Desimone, et al., 2002, p.81). Furthermore, "*Professional development programs are systematic efforts to bring about change in classroom practices of teachers, in their attitudes and beliefs and in the learning outcomes of students*" (Guskey, 1986, 2002, p.381).

The conceptual framework of this research describes the process that teachers underwent as a result of their participation in the EMPI programme. They chose to participate in the programme because they had a feeling of negative self efficacy. They made a personal decision to participate in a process of PD to find a solution which brought them to the programme. They were provided with basic theoretical knowledge and new practices which they adapted and applied in their teaching. This led to a change in beliefs and attitudes once they felt that their students were learning to read. The programme was planned and carried out by the researcher with the main intention of providing teachers with practical solutions in the classroom. The results of this research have shown that the teachers have undergone a process of PD that complies with the conceptual framework of the research. Guskey (1986, 2002) provides the temporal sequence of teacher change which shows that before beliefs change teachers change their practices and see changes in

student outcomes. The study carried out by Meiers and Ingvarson (2005), Ingvarson, Meiers and Beavis (2005) showed that impact was left by PD programmes on the teachers' knowledge, their practices, the students' learning and the teachers' sense of efficacy. All of these areas of impact comprise the conceptual framework of this research as well and were found among the participating teachers. Finally, the key features of promising PD as described by Garet, et al. (2001) and used by Garet, et al. (2008) in their research, correlate with the findings of this research, indicating that the teachers had received '*high quality*' PD, as defined by Supovitz (2001). According to Supovitz (2001) superior teaching acquired through high standard PD programmes leads to improved student academic standards. Meiers and Ingvarson (2005) found that when a PD programme provides a focus on content it influences teaching practices which boosts teacher's self efficacy. This was also found in this research, based on an intervention programme which placed an emphasis on the practical aspects of teaching children with dyslexia to read.

The EMPI programme was found to be a new beginning and an important stage in the teachers' professional and personal lives. Their autonomy enabled them to accept or reject instructional reform as the need arose (Fullan, 1991) and they could use their professionality to choose the approach that worked for them (Dexter, Andersen, and Becker, 1999). The teachers who participated in the programme underwent a process of PD and acquired theoretical and practical knowledge and skills which enabled them to teach students with dyslexic characteristics more efficiently. They considered themselves professionals who were learners for life and acknowledged their professionality. As Polk (2006) has claimed, PD enabled them to grow professionally. The process the teachers underwent complies with Lee's (2005) claim that teachers will grow professionally when they participate in PD programmes that conform to their needs.

The conceptual framework of this research presents the process of PD as discussed in previous sections. The participating teachers, however, have also described the elements that comprise the end result, some of which appear in the theories underlying the conceptual framework, and some of which do not. They described their PD in terms of the following: self efficacy, the process of professional development, self as a learner for

life, change in status at school which resulted from changes in knowledge and practices, and achievements after completing the programme. These elements are discussed below. In the end programme features that are related with PD are discussed.

6.3.2 Positive Sense of Self Efficacy

The process of PD that the teachers underwent brought them from a negative to a positive sense of self efficacy. A strong sense of self-efficacy influences the enthusiasm, practices and teaching behaviour of committed teachers (Tschannen-Moran and Woolfolk Hoy, 2001; Skaalvik and Skaalvik, 2007; Wolters and Daugherty, 2007). It has been connected to positive teacher behaviours as well as interactions with students (Guskey, 1984, 1988; Ashton and Webb, 1986; Hall, Burley, Villeme and Brockmeier, 1992). One outcome of the teachers' participation in the EMPI programme brought about improved self efficacy and confidence which led to independent, professional decision making. The programme strengthened the teachers' self efficacy because they were shown a different way to teach which was successful. The teachers felt more confident and believed they could carry out the job professionally. They were convinced that they should teach phonics because they felt they possessed the tools they needed to face difficulties in the field. Personal self efficacy affects the teachers' instructional practices (Woolfolk and Hoy, 1990) and confident teachers are willing to bring innovations into their teaching (Guskey, 1988). Once they felt their students showed improved academic performance they were motivated to carry on and to avert future student failure which had left them with a feeling of negative self efficacy in the past. As a result of the process of PD they were left with a feeling of positive self efficacy.

A high sense of self efficacy leads to increased persistence which may bring about stronger student achievement (Ashton and Webb, 1986; Ross, 1992). Further, teachers who have a positive sense of self efficacy are more open to ideas and are ready to experiment (Guskey, 1988; Stein and Wang, 1988; Cousins and Walker, 2000). They also have more chance of remaining in the profession, as was the case in the current research, (Glickman and Tamashiro, 1982; Burley, Hall, Villeme and Brockmeier, 1991) and experiencing job satisfaction (Klassen, et al., 2009).

In sum, as a result of the PD programme, the teachers considered themselves professionals who pursued a career of life long learning. The programme met their professional needs and strengthened their self efficacy which enabled them to experience both professional and personal growth.

6.3.3 Personal Professional Development

Professionals evolve as a result of participation in a process of PD (Polk, 2006). Some teachers accredited their professionality as a direct outcome of the programme and felt it had brought about professional growth. Other teachers acknowledged that their professional status was an outcome of their participation in the programme. There were those who considered it a new beginning or felt fulfilment and that the acquisition of new skills provided something that was lacking. As Lee (2005) claimed, teachers will attain professional growth if the PD programme meets their personal and professional needs (Lee, 2005). They described the process of PD as appears in the conceptual framework of this research, and acknowledged their own professional development intuitively.

Most of the respondents (64%) related to teaching as a profession with a responsibility towards the students. They did not regard it simply a job. Woods, Jeffery, and Troman (1997) said that motivated teachers invest in their profession and see a connection between their personal and professional worth. They value themselves and the work they do. When they feel that they are not teaching well enough they look for solutions. This was the case with this cohort of teachers. Elliot and Crosswell (2002) described committed teachers as those who are serious about their jobs and show care and dedication. In the study carried out by Day (2000) he also found that teachers regarded teaching as a profession and that teachers had to invest a great deal in themselves as professionals. Teaching was not perceived by teachers in this research simply as a job but a career which needs personal investment and life long learning. The cohort of teachers who participated in this research thus showed that they were truly professional and ready to take on responsibility.

Fullan (1982) said that PD changes the way teachers think and do. Over 20% of the respondents acknowledged the professional impact the EMPI programme had left on

them since it provided the practical tools and theory they needed. They felt they had changed and because of the practical input it had helped their teaching and enabled them to make innovations in their work.

According to Woods, Jeffery and Troman (1997) teachers are willing to invest in their professional development when they feel there is a connection between their personal and professional worth. Some teachers in this research even went as far as to say that they have changed as individuals since the participation in the programme and that the impact was both personal and professional. They felt they had changed as people.

6.3.4 Self as Learner for Life

If teachers want to use innovative teaching strategies they need to acquire the knowledge and apply it accordingly. An integral aspect of teaching is the need to carry out a continual process of learning (Putnam and Borko, 1997; Wilson and Berne, 1999; Borko, 2004). If teachers want to succeed they need to learn and update their knowledge throughout their careers. PD provides the framework and the relationship of new knowledge attainment and its successful application is defined by Fullan (1992) as '*teacher as learner*'.

The respondents in this research acknowledged the importance of being learners for life. They conveyed the notion that teachers need to study all the time and keep up with innovations in the field. This is an integral part of their professional image and makes them better teachers. In the unstructured interviews each teacher described how participating in programmes and learning further has been an essential part of their professional development throughout the years. They sought additional knowledge and tools to help them throughout their careers. The EMPI programme was an important stage in the teachers' professional lives and changed their knowledge, practices and beliefs. Within the framework of PD the teachers were given opportunities to learn, which according to Park (2005) contributes to their commitment. The teachers in this research were constantly on the lookout for ways to contend with difficulties in their teaching environment. They were professionals.

6.3.5 Change in Status

Teachers will change their practices and beliefs if the learning experience they undergo relates to the needs of the classroom (Garet, et al., 2001; Kinnucan-Welsh, Rosemary and Grogan, 2006). A few teachers described how their status at their schools had changed because they were regarded by their peers as experts in the field of dyslexia. Educators who experience PD have a key role to play in changing the face of education in the future (Guskey and Huberman, 1995; Borko, 2004). Teachers who undergo 'high quality' PD will be able to bring about changes (Guskey, 2002). They received respect from others and their opinions were valued which led to them influencing changes and decision making in the school. This is an interesting finding showing the scope of influence of PD.

Some teachers felt the need to recommend the programme to others because they thought there was a need for expert reading teachers in the field. The positive personal experience of these teachers enabled them to feel confident enough to recommend the programme. It also reflects the fact that the programmes had left an impact on them. They were able to evaluate the needs of the field.

6.3.6 Achievements after the Programme

The EMPI programme not only produced professional teachers of reading intervention but also left a positive effect in a variety of unexpected areas. The most important finding was that most of the teachers said that they had kept on working with children with dyslexic characteristics as a result of the programme. The programme had succeeded in arousing their interest in dyslexia and they pursued teaching in this area even though they didn't receive backing or support from the system. This conforms to the CF of this research since they had acquired knowledge and innovative practices which worked and they believed that they were able to teach these pupils. The education system has gained an additional group of qualified teachers who are able to deal with difficulties issues. They are knowledgeable and able to provide suitable tuition. Furthermore, several teachers advanced academically and have taken up positions in academic colleges teaching programmes related to dyslexia and the teaching of readers at risk. Some respondents went on to qualify as diagnostic assessors in EFL which is a new area of

assessment. As a result of the process they had been through their beliefs had changed and they replaced their negative self efficacy with positive feelings about themselves. This correlates with the conceptual framework of this research and is the completion of the cycle from negative self efficacy through change in knowledge, practices in beliefs to positive self efficacy when student attainment improves. Even though they were EFL teachers they decided to move into a new professional area and to develop in additional different directions. They had consolidated knowledge and deeper understanding of issues related to dyslexia in EFL which is a growing area. Their process of PD had enabled them to do this. Others wrote their own remedial programmes or opened learning centres in a private capacity.

6.3.7 Programme Features and Professional Development

This final section illustrates how the EMPI programme conforms to most of the features described by Garet, et al. (2001), features that were used in the study carried out by Garet, et al. (2008) on *The Impact of two Professional Development interventions on early reading instruction and achievement.*

The teachers in my research described their professional development and the professional and personal impact that the programme left on them. The programme had not been organized as a part of educational reform or an official attempt to improve the standard of education. Rather, it was originally set up on the personal initiative of the lecturer who knew there was a need for more in depth understanding of dyslexia and an urgent need for better practices. The programme had most of the structural and core features described by Garet, et al. (2001) and the key features of Promising Professional Development which are part of the model of the Theory of Action for the Early Reading PD Intervention Study described by Garet, et al. (2008).

The following section will show how the EMPI programme conforms to most of the key features described by Garet, et al. (2001), features that were used in the model described Garet, et al. (2008). The features have an effect on teachers' knowledge, skills and teaching practices.

Structural features are those "*characteristics of the structure or design of professional development activities*" *(*Garet, et al., 2001, p.919).

Form of activity

The programme was originally taught as a framework for on-going research for in-service teachers and in the year 2000 was introduced into the framework of two academic colleges. It did not take place during the school day and was not taught at the school. The '*workshop'* type of PD is usually carried out outside the classroom and school framework and has been criticized as being ineffective for providing enough input to improve teachers' knowledge and change practices (Garet, et al., 2001). Therefore '*reform*' types of PD are recommended that include study groups or mentoring and coaching and take place during the school day. This way a connection between classroom teaching and what is being taught within the PD programme can be consolidated (Garet, et al., 2001). The groups of teachers in the current research were heterogeneous groups of EFL teachers who taught from Grade 1- Grade 12 and came from different schools in the north of Israel. They formed a study group because they were all interested in teaching students with dyslexic characteristics to read in English. Desimone, et al. (2002) recommend that the group should be composed of teachers from the same school and not a group of individuals. However, this research has shown that PD with committed teachers may succeed under various conditions.

Further, teachers participating in the research did not receive mentoring or coaching to help with their classroom teaching which is characteristic of '*reform*'" type PD (Garet, et al., 2001). Therefore, there was no one to respond in the classroom to their learning, make the necessary recommendations or to provide responses to their needs thereby ensuring the consolidation of practices (Ball, 1996; Stiles, Loucks-Horsely and Hewson, 1996; Darling-Hammond, 1997; Garet, et al., 2001). They were left to their own devices and received no feedback on their teaching from peers or other professionals at their work place. The EMPI programme provided the framework of a study group which has enabled them to work independently without any kind of coaching or mentoring to provide guidance.

In the study carried out by Ingvarson, Meiers and Beavis (2005) and Meiers and Ingvarsen (2005) they stress the necessity to provide participants in any PD programme with recurrent feedback. Because the participants in this research taught in various schools and attended the programme on their own initiative no feedback was given to their actual new teaching practices in their schools or classrooms. However, feedback was given during the programme through simulations and issues which were raised by the teachers themselves when they asked for peer advice or support. The results of this research showed that a PD programme may work, even under varying conditions, provided that teachers are committed to their profession. They might have lacked the direct support on the spot to consolidated their practices but the results show that changes did come about

Collective participation

Teachers who come from the same school, or department or grade level were considered by Garet, et al. 2001 and Desimone, et al. (2002) to represent collective participation in their studies. In this research the teachers were not from the same school but formed a study group because they were all EFL teachers with a desire to learn how to teach students with dyslexic characteristics to read. Garet, et al. (2001) include study groups as an example of a '*reform type'* of PD. Throughout the programme they discussed issues and exchanged ideas even though they could not give on the spot feedback in the classroom or school. When teachers collectively participate in the same activity they can create a forum of debate which improves their understanding and extends their ability to grow (Ball, 1996). Garet, et al. (2001) explained that this interaction among teachers sustains PD. Throughout the programme the teachers consulted with their peers and sought solutions to problems, advice on how to teach and to deepen their understanding of issues they were facing on a daily basis as if they were in the same school without mentoring or coaching.

Duration

The programme was given over a period of an academic year (56 hours). From the responses of the teachers it seems that the programme was long enough to sustain

changes and enable the teachers to learn, and was not a '*workshop*' type of PD (Garet, et al., 2001). The respondents said that even up to 15 years after their original participation in the programme they were involved in the teaching of reading, to struggling readers particularly students with dyslexic characteristics. Cohen and Hill (2001) and Garet, et al. (2001) found a connection between the time span and number of hours and opportunities to learn. That is, when a programme is of longer duration the outcomes tend to be better because teachers are able to learn more and consolidate their practices and sustain them over time. Ingvarson, Meiers and Beavis (2005) and Meiers and Ingvarsen (2005) also found that the success of programmes was connected with duration. In the study carried out by Garet, et al. (2008) the participating teachers received 48 hours of PD and there was impact on their knowledge and teaching practices. Shields, Marsh and Adelman (1998) explain that the length of PD affects the degree of change that teachers undergo. That is, the EMPI programme corresponded with the recommendations regarding programme duration.

Core features-"*dimensions of the substance or core of the professional development experience"* (Garet, et al., 2001, p.919).

Focus on content

The programme provided the teachers with theoretical knowledge of the subject matter and taught them how to teach the content. PD must focus on this process (Hiebert, et al., 1996; Cohen and Hill, 2000; Garet, et al., 2001; Desimone, et al., 2002). The teachers acquired the knowledge and tools that they needed and they focused on how children learn to read. This brought about changes in their practices. In the opinion of Garet, et al. (2001, p.925) the degree of content focus can be viewed as " *a central dimension of high-quality professional development*". In the study carried out by Garet, et al. (2008) teachers were instructed in the essentials of reading instruction. Ingvarson, Meiers and Beavis (2005) and Meiers and Ingvarson (2005) found that focus on content left an impact on knowledge particularly knowledge related to how students learn and methods to teach them. Kennedy (1998) said that when PD focuses on specific contents and how students learn them, there is a positive effect on the students' outcomes. The current

programme focused on both theoretical and practical knowledge. Consequently, impact was left on both knowledge and practices. .

Active learning

Garet, et al., (2001) consider active learning to be of utmost importance in any PD programme. Observing or being observed in the classroom is one of the ways to carry this out. In the current EMPI programme this could not be conducted due to funding limitations. However, every teacher had to teach a peer and simulate an exemplary intervention lesson during programme sessions. They functioned in both the roles of teacher and pupil. The teachers also observed the lecturer teaching a student and vice versa, and watched two videoed lessons. These activities are different forms of active learning. According to Garet, et al. (2001), Ingvarson, Meiers and Beavis (2005) and Meiers and Ingvarson (2005) found that trying out new teaching methods was necessary. Garet, et al. (2008) provided PD that encouraged the teachers to actively participate and to carry out practices one of which was explicit instruction.

The EMPI programme was built around the teaching of an explicit, multisensory, phonics intervention lesson. The teachers were provided with basic knowledge of the theory and understanding of phonics. They were given explicit instruction as to how to build a structured intervention lesson. Furthermore, the teachers developed materials for each stage and they were instructed how to use them. The process was carried out thoroughly and all the elements of the lesson were practiced and clearly understood. Desimone, et al. (2002) reported that when focus was placed on certain practices the teachers tended to try them out in their classrooms. Only after the teachers had been shown how to prepare materials and teach each stage of the lesson a practical session took place. The pace of the programme assured that their application was carried out properly. They had gone through a process of negative self efficacy, the strengthening of the knowledge basis and adoption and application of new practices. This came about because they actually taught one another so that active learning became an integral part of the programme bringing changes in self efficacy and knowledge.

Follow up of teaching practices in the classroom was limited to questions or responses to ideas that had been brought up during the programme by the teachers themselves. They did not collaborate on students' work or provide feedback. Ingvarson, Meiers and Beavis (2005) and Meiers and Ingvarson (2005) describe the '*Opportunity to Learn'* block, incorporated in their model, which included content focus, active learning in addition to follow up, collaborative examination of student work and feedback on practice. They found that active learning had an effect on the programme outcomes. Active learning was found to influence teacher practices and teacher efficacy. However, feedback and collaborative examination of student work left a weak influence on their study. Other research (Hawley and Valli, 1999) showed that these variables were important. The current research has overlooked feedback and collaborative examination of students work and yet changes in practices came about as described by Guskey (1986, 2002). This research lacked follow up but the self efficacy of the teachers improved and affected their teaching and consequently their student outcomes for the better. The teachers went through an intensive, thorough preparation throughout the academic year and in the end were confident in their ability to carry out an intervention lesson efficiently. They understood the rationale behind each step and believed that they were working the best way possible. Some even said that they had seen improvement in the reading ability of their students. Teachers' practices changed and teachers' self efficacy increased as a result of active learning. This is similar to the findings of Ingvarson, Meiers and Beavis (2005) and Meiers and Invargson (2005).

Coherence

The teachers explained that that they needed a programme that could help them deal with difficult problems in the field. This programme took them through a learning experience which related directly to their practical professional needs. Practices and beliefs can change if PD is connected directly to the classroom requirements and the needs of the curriculum (Garet, et al., 2001; Kinnucan-Welsh, Rosemary and Grogan, 2006).

In the study carried out by Meiers and Ingvarson (2005) and Ingvarson, Meiers and Beavis (2005) they claimed that a longitudinal study was needed to determine the impact

of practices on student learning. The current research was carried out post factum (in some cases 15 years had passed) and therefore changes had been understood by the teachers and taken up by them. PD left an impact of change.

In sum, the EMPI programme of PD emphasized the acquisition of theoretical and practical knowledge related to the teaching of reading. Features that existed in the programme included the structural features of duration, form of the activity and collective participation as well as core features of focus on content, active learning and coherence. Even though several features such as feedback and coaching and mentoring were lacking and the fact that teachers were not from the same school, the teachers underwent high quality professional development which led to positive changes in their teaching and in their feeling of self efficacy.

6.3.8 Impact of the Programme in Terms of Change in Knowledge

Student attainment is the outcome of PD development but it will not succeed unless there is a solid basis of theoretical knowledge. The model of Ingvarson, Meiers and Beavis 2005; Meiers and Ingvarson 2005 showed that knowledge was one of the areas of impact left by the professional development programmes they had studied and Garet, et al. (2008) found that improved teacher knowledge was the direct outcome of PD as well.

Shulman (1987) explained that teachers need to acquire different kinds of knowledge in order to become expert teachers. They need knowledge of the subject matter (content knowledge) as well as the practical application (pedagogical content knowledge).

The acquisition of this knowledge enables teachers to provide effective professional instruction (Krishnaveni and Anitha, 2007). When teachers deepen their knowledge of the subject they have to teach, practices change and student attainment improves (Kennedy, 1998; Cohen and Hill, 2001; Garet, et al., 2001).

Moreover, there is a link between PD and student attainment which is reflected when teachers adopt new practices which provide new learning opportunities for students (Meiers and Ingvarson, 2005). Teachers' learning leads to better understanding of how the child learns. Therefore, PD is the best means to provide the teacher with knowledge.

They will develop the necessary understanding to carry out good professional teaching and reflect what Shulman says:"*Those who can, do. Those who understand, teach*" (1986b, p.14).

The results of this research showed that most of the teachers felt that their knowledge of the essential for beginning reading had increased. They felt that they had improved in three different areas. Firstly, they were taught the subject matter knowledge (CK) that they lacked. This is described in detail in the results in RQ#2. Secondly, once they consolidated this knowledge they understood the theoretical background for teaching phonics. They were then able to learn practices which they could carry out effectively in intervention frameworks or in their regular classrooms. An additional finding was the deepening of their understanding of dyslexia and the specific difficulties facing struggling readers. This brought about a change in attitude towards these students and provided a new perspective of their needs and abilities. The studies carried out by Ingvarson, Meiers and Beavis (2005), Meiers and Ingvarson (2005) and Garet, et al. (2008) showed that PD initially left an impact on the teachers' knowledge which led to changes in practices. The findings of this research found this to be the case as well so that when practices are found to be effective, student attainment improves as well.

Prior to their participation in the programme, the teachers felt that they lacked the knowledge to teach the essentials of beginning reading. According to Borko (2004) teachers will undergo change when PD provides them with knowledge. This is supported by the findings reported by Ingvarson, Meiers and Beavis (2005), Meiers and Ingvarson (2005) and Garet, et al. (2008) who found that after teachers acquire knowledge their practices are affected. The programme provided them with knowledge which they needed to improve their students' outcomes and contributed to a basis for better teaching. They felt more confident about their decisions and practical choices because they could defend their changes. Furthermore, they reported an improvement in their teaching practices because of the impact of the new knowledge acquired on the programme. Studies have shown that the quality of teachers' knowledge impacts student learning (Ferguson, 1991; Ferguson and Ladd, 1996; Darling-Hammond, 2000; Muijs and Reynolds, 2000; Wenglinsky, 2002).

6.3.9 Acquisition of Content Knowledge and Pedagogical Content Knowledge

Shulman (1986b) explained that knowledge of the subject matter is a pre-requisite to teaching of a subject**.** It must be taught and internalized by teachers who teach reading and spelling explicitly. Content knowledge here means knowledge of phonics, phonological awareness and the structure of the English language.

Moats (1994) and Bos, et al. (2001) found that teachers lacked this knowledge in L1. Almost all the teachers in this research stated that they had consolidated a basis of content knowledge which they felt was inadequate before their participation in the programme.

The programme taught the teachers the underlying principles of phonics and introduced them to the importance of phonemic awareness, and spelling in the reading process. These are the essential elements that a novice reader has to master in order to consolidate strong word recognition so that s/he can read effortlessly. According to their responses, some of the teachers had used a phonics approach but their methods were based on instinct rather than on the theoretical knowledge of the rationale behind the sounding out of words. The programme deepened their understanding of the process of reading acquisition. When the teachers understood the material they felt they were able to teach it and incorporate it into their personal teaching repertoires. Teachers must acquire the knowledge to break the code (NRP, 2000; McCardle and Chhabra, 2004).

Guskey's model of teacher change (1986, 2002) emphasizes the temporal order of teaching change where change in practices precedes change in student learning outcomes. In his model, knowledge is not described as a goal of PD, but rather, the positive implementation of practices will lead to changes in outcomes. However, effective PD programmes depend on knowledge (Joyce and Showers, 1982; Kennedy, 1998; Hawley and Valli, 1999; Cohen and Hill, 2000). Ingvarson, Meiers and Beavis (2005), Meiers and Ingvarson (2005) and Garet, et al. (2008) also found that knowledge was the basis to change in practices. It is a central component in their models. Further, the results of RQ#2 and the responses to questions in this section show the centrality of knowledge. When teachers deepen their knowledge of the subject they have to teach, practices change

and student attainment improves (Kennedy, 1998; Cohen and Hill, 2001; Garet, et al., 2001).

The teachers reported that their personal teaching practices have changed as a direct result of the programme. They said that the programme provided them with practical tools to teach students with dyslexic characteristics and make the approach to reading explicit. They felt they understood their needs better and had gained the practical knowledge to carry out the task of teaching reading so that these students were successful and showed progress.

Once the teachers were taught the theoretical logic behind the use of the phonics they could justify their approach and felt confident about the practices they were using to teach beginning reading. Furthermore, Loucks-Horsley in an interview with Sparks (1997) explained that teachers must be able to present material and translate their knowledge into practices in the classroom that tally with the student's stage of development. According to Shulman (1986b) when teachers acquire PCK they have the knowledge that includes the understanding of why it is easy or difficult to learn a specific subject. This gives them the opportunity to apply different approaches and at the same time to understand and justify their methodology. When teachers use methods they have been taught they can determine whether they are suitable or not to incorporate in their personal repertoire.

Garet, et al. (2001) stressed the importance of 'hands on' experiences in addition to the focus on CK. The practical experience allowed the teachers to find suitable practices that could work for their student populations. They felt secure enough to criticize textbooks they were expected to use and felt that they could justify their practices because they had the theoretical basis. This correlates with the core feature of **focus on content** as described by Garet, et al. (2008) in their model. The focus is on the subject that has to be taught and how the student will learn it. PD provides the knowledge. The study carried out by Garet, et al. (2008) showed a positive impact was left on the teachers' knowledge and practices as a result of professional development. Furthermore, the teachers in the current research also understood the necessity to teach lower level reading skills in EFL

and saw the effect of L1 on the reading process in L2. Studies have shown that the same cognitive and linguistic skills applied in L1 are needed in EFL/L2 (Hung and Zeng, 1981; Mann, 1986; Cossu, et al., 1988; Ganschow, et al., 1991; Lundberg and Hoiem, 1991; Naslund and Schneider, 1991; Sparks and Ganchow, 1991; Durgunoglu and Hancin, 1992; Bowers, 1995; Geva and Siegel, 2000). Knowledge emboldened the teachers as individuals to take the step to internalize a totally different way of teaching reading and to apply it. They changed their practices to a phonics approach and reported that their students were succeeding.

The teachers said that the acquisition of both theoretical and practical knowledge left them with a feeling of confidence to cope more efficiently with the difficulties they had to face on a daily basis. They felt they had justification of the method of teaching that they were applying. They were able to organize and present their material better in both an intervention lesson and in the regular classroom. Loucks-Horsley in an interview with Sparks (1997) backs up outcomes and feelings reported by the teachers in this research because she explains that they must transfer acquired knowledge to better classroom teaching and adopt the approaches as part of their teaching repertoire. In the long run, the impact of knowledge provided by PD will lead to better student learning. This was found by other researchers (Ferguson, 1991; Ferguson and Ladd, 1996; Darling-Hammond, 2000; Muijs and Reynolds, 2000; Wenglinsky, 2000).

6.3.10 Knowledge about Dyslexia

Another interesting finding was the fact that the teachers felt they were better equipped to teach students with dyslexic characteristics not only because they had practical tools but they had deepened their understanding of the difficulties confronting this special student population in the classroom. The EMPI programme provided solutions to the difficulties that these students were facing and provided the teachers with practical tools to deal with them. These were sadly lacking. Students with dyslexia have difficulties with the phonological processing of words and are weak at word recognition (Torgesen, 1999; Vellutino and Fletcher, 2005). They understood that they also have difficulties applying the alphabetic principle (Share and Stanovich, 1995) and these constraints prevent them

from becoming fluent readers (Ehri, 2002). The teachers understood why these students were not succeeding and showed more empathy towards them. Children with dyslexia often struggle to learn a FL since they have to cope with their reading difficulties and learn an additional language (Correa and Heward, 2000). The teachers felt their newly acquired knowledge empowered them to develop ways to deal with their special needs more effectively. They were able to provide proper intervention as a result of their newly acquired knowledge. EFL beginning readers who had difficulties in L1 (Hebrew) may be at risk for and need intervention in English (Kahn-Horwitz, Shimron and Sparks, 2006). The EMPI programme provided practical solutions and teachers were able to change their practices.

In sum, the process of PD provided teachers with the theoretical knowledge and understanding of how their students learn so that they could use practices that would lead to successful student outcomes. When the teachers understood the difficulties facing struggling readers, they were able to use practices that met the special needs of this student population.

The next section describes how teaching practices changed as a result of PD for both elementary and junior high and high school teachers. It then elaborates on the specific practices that changed as a result of the programme, and finally illustrates how the practices have been applied to the general pupil population.

6.3.11 Impact on Practices

Teacher change is a personal process which takes place over a period of time that leads to changes in beliefs and values (Treacy, Klieman and Peterson, 2002), and will come about if PD brings about a change in practices (Guskey, 1986, 2002). It occurs when teachers learn new things, experiment with new ideas or innovations and evaluate them (Richardson, 2003; Levy and Murmane, 2004). When teachers observe new practices and experiment with them the PD programme tends to be more successful than programmes that attempt to change attitudes initially (Ingvarsen, Meiers and Beavis, 2005).

In this research the teachers reported that participation in the programme had resulted in a change in their teaching practices. The respondents reported that they had been given practical tools to teach phonics, as they had acquired deeper insights into their understanding of the reading process. This brought about significant changes. They felt they had acquired a systematic approach to reading which was no longer based on intuition but on knowledge. The programme related to the needs of the classroom as Garet et al. (2001) and Kinnucan-Welsh, Rosemary and Grogan (2006) recommended. All these gave them the confidence to teach efficiently. Torgesen (2004) explained that an explicit systematic approach enables almost all children to learn how to read. Likewise, they were given practical tools to teach the at risk populations of students. The practical emphasis of the programme was an eye opener for them and increased the practical solutions for teaching children with dyslexic characteristics. Ingvarsen, Meiers and Beavis (2005) found that opportunities for active learning leave an impact on practices.

An additional interesting finding was the impact left on junior high school and high school teachers. They reported that they had introduced the teaching of reading into their classrooms. Before their participation in the programme, they had never taught reading since it was not part of their teaching repertoire. They had not been trained to carry out this task as elementary school teachers are expected to do so. They realized that if they wanted to change the plight of 'non readers', this at risk population of students had to be taught how to read. The programme gave them the opportunity to become better teachers and to acquire the practical tools to carry out this important task which would lead to better student outcomes.

This research also showed the importance of vocabulary acquisition from the perspective of teachers. The respondents changed their approach to reading. They continued to place an emphasis on vocabulary acquisition, because this is an integral part of their training as EFL teachers and promotes success in reading and writing (Amdur, et al., 2009).

6.3.12 Professional Development and Change in Practices

The acquisition of knowledge brings about changes in practices (Ingvarson, Meiers and Beavis, 2005; Meiers and Ingvarson, 2005; Garet, et al., 2008). PD is the means that brings about change. Once the teachers had been through a process of PD they changed their practical approach to reading. Changes are innovated when the practical application of new skills is carried out (Loucks-Horsley, et al., 2003; Supovitz and Turner, 2000). The teachers internalized practices in order to teach phonics which they believed would help them teach at risk readers in an intervention framework. Wenglinsky (2002) found that PD influences teaching practices very much. The programme gave the teachers practical tools which they were looking for and they tried them out in their teaching situations. Fullan and Miles (1992) maintained that teachers hope to get practical tools from PD programmes to apply in their regular classroom. Timperley (2008) added that changes in practices would come about when teachers retried ideas that have been partially understood when they were confronted with problems in their dealings with different student populations. The programme provided them with solutions to difficulties they faced daily.

The teachers in the current EMPI programme were instructed in a specific explicit approach (phonics) to teach beginning reading. They then applied it in their daily teaching. Research findings have shown that there is a connection between PD and teaching practices (Cohen and Hill, 1998; Supovitz, Mayer and Kahle, 2000; Supovitz and Turner, 2000). In the study carried out by Andreasen, Swan and Dixon (2007) teachers underwent change which was brought about by changes in their practices. Teachers will change their practices if they are given the opportunity to try them out and observe positive results (Borasi, Fonzi, Smith and Rose, 1999; Lloyd, 2002; Szydlik, Szydlik and Benson, 2003). Furthermore, changes in teaching practices and improved student achievement, is usually brought about by PD (Little, 1993; Darling-Hammond and McLaughlin, 1995; Elmore, 1997; Corcoran, Shields and Zucker, 1998; Ball and Cohen, 1999; Cohen and Hill, 2000; Timperley, 2008). In the study carried out by Dexter, Anderson and Becker (1999) the computer teachers took the responsibility to change practices after careful reasoning when they saw successful results. In the current

research a similar situation existed and once teachers tried out new practices they adopted them when they felt their students were improving. This is in accordance with Guskey's model of teacher change (1986, 2002) and Garet, et al. (2001) and Garet, et al. (2008) who found that teachers used the teaching practices they had been taught in their classroom situations. Ingvarson, Meiers and Beavis (2005) also found that when teachers try out new methods that have been modelled and taught, the PD programme tends to be successful.

Desimone, et al. (2002) found that when PD concentrated on specific teaching practices the teachers used them in the classrooms. Mentors and coaches are usually provided to assure the principles and methods are consolidated in the classroom (Danielson 1996; Mundry, Spector and Loucks-Horsley, 1999; Garet, et al., 2001). When teachers have on-going support and guidance it is easier to sustain changes and to connect with classroom teaching. However, this was not the case in this research, as the teachers received no professional guidance or support at school and their PD took place extra curricularly. Teachers in this research did their practical teaching through simulation within the programme. Once they completed the programme they were on their own and lacked support from fellow teachers or school administrators. If they applied ideas they could only subjectively evaluate the outcome. Yet, participants reported change. This is in contrast to the findings of Little (1993) who found that almost no changes were seen in the teaching practices when little focus and follow up was given to teachers in their classroom setting. Other studies have shown that practices are affected when teachers receive help and encouragement at their workplace (Talbert and McLaughlin, 1993; Ball, 1996; Knapp, 1997; Elmore, 2002).

An explanation for this could be linked to the determination of the participating teachers to overcome their sense of negative self efficacy and their commitment to their profession and students.. They knew no one at school would help them and this led them to find outside solutions. They participated in the programme on their own initiative and in their free time. So they were highly motivated and committed from the start. They did not need school support and supervision to implement the change. They were determined to make changes that they truly wanted and see their students succeed.

According to Rosenholtz (1989) autonomy is an integral part of commitment to student attainment and is central to internal motivation (Deci and Ryan, 1985). Their motivation and commitment is evidenced in that they filled out the questionnaires years later. Firestone and Pennell (1993) said that autonomy allows teachers to attribute success to themselves which creates commitment. The questionnaire was sent to teachers who had completed the programme a minimum of three years previously and in some case up to ten years had elapsed. Therefore, enough time had passed for them to assess if changes had come about and if the practices had proved themselves in the field. PD brings about changes in practices first, as described by Guskey (1986, 2002) and this seems to have been the case in this research as well. In sum, the teachers resolved to bring about change once they adopted new practices as a result of PD and saw student attainment.

6.3.13 Aspects of Change in Practices

Minskoff (2005) states that students with dyslexic characteristics fail in the regular classroom since inappropriate methods are used. In order to succeed the teacher must teach them the way they can learn and meet their individual needs (Vellutino and Scanlon, 2003).

The teachers described the specific practices that they consolidated and used as a result of the programme. They no longer needed to rely on their intuition. In the opinion of Foorman, Brier and Fletcher, (2003) and Schatschneider, et al. (2004) it is possible to improve poor reading performance but it is up to the teacher to find the difficulties and implement solutions that will work (Kamps, et al., 2008). The teachers reported that the programme provided them with successful solutions. The new practices they adopted reflect the impact left on them by the programme.

<u>Practical application of principles of phonics</u>

This research showed how the teachers applied specific principles of the teaching of systematic phonics. The main finding was the application of decodable texts at the level of the student. In the past students were not exposed to enough text to practice word recognition. Texts of a reasonable length are lacking in textbooks that students use in

school. This is an innovation introduced by the EMPI programme. Share and Stanovich (1995) postulate, that readers must practice reading so that word forms will be retained in memory and advance effective reading. This is backed up by Ehri (1998) who found that significant growth in sight vocabularies comes about as a result of reading practice. Several studies recommend the use of structured reading texts matched to the level of the learner together with an explicit teaching approach (Hatcher, Hulme and Ellis, 1994; Snow, Burns and Griffin, 1998; Juel and Minden-Cupp, 2000, Hatcher, Hulme and Snowling, 2004). Based on the literature, this was introduced into the programme, and was eventually described by the teachers to have left an impact.

Using success orientated materials

In the EMPI programme teachers were taught to prepare a success orientated lesson. This is recommended by Minskoff (2005), and is based on the rationale that the difficulty of the reading task should be controlled and positive reinforcement should be given (Swanson and Hoskyn, 1998; Swanson, 1999; Vaughn, Gersten, and Chard, 2000; Carnine, Silber, Kame'enui and Tarver, 2004; Minskoff, 2005). The rationale is that the child with dyslexic characteristics must be given a feeling of accomplishment and progress so that s/he will be motivated to persevere and succeed. S/he should experience academic success in every lesson (Williams Bost and Riccomini, 2006) and receive positive feedback and encouragement (Gersten and Baker, 2000; Guthrie, Schafer and Huang, 2001).

Teachers can know in advance who is at risk and prepare accordingly. Children who have had difficulty learning to read in L1 will probably have difficulties in L2/EFL (Cummins, 1979; Geva, Wade-Woolley, and Shany, 1993; Sparks and Ganschow, 1993a, 1993b; Ho and Fong, 2005). Therefore it is possible to anticipate the difficulties and provide suitable intervention as soon as possible (Kahn-Horwitz, Shimron and Sparks, 2006). The principle is that students are not expected to learn by themselves and they must be given materials they can handle successfully (Strickland, 2003; Tam, Heward and Heng, 2006). Thus, as a result of the programme the teachers used success orientated lessons and saw the expected benefits.

Using a cumulative/ systematic approach

Another important change in the practices of the teachers was the understanding that students at risk need a systematic, cumulative approach to reading with lots of intense practice. Ehri and McCormick (1998) support this and state that there is no place for self discovery when one teaches an at risk population of readers. The results showed that the teachers were fully aware of this fact and they said that they applied this principle to their teaching and left nothing to chance. They knew that they had to repeat and recycle material until they were satisfied it had been internalized by all the students. If children receive intensive, explicit instruction as early as possible, it is practically possible to reduce the numbers of struggling readers (Torgesen, 2004).

Using small units of knowledge

The teachers learnt to teach phonics explicitly by gradually introducing grapheme phoneme correspondences. This was not applied in the past and had been the reason for many struggling readers being unable to consolidate word recognition. Ehri and McCormick (1998) recommend the teaching of grapheme phoneme connections. Moreover, they say that EFL students should receive explicit instruction in order to decode efficiently. The most effective method of teaching readers with dyslexic characteristics word recognition skills is explicit teaching (Swanson, 1999; Vaughn, Gersten and Chard, 2000; Gersten, Fuchs and Williams, 2001; Carnine, Silber, Kame'enui and Tarver, 2004; Minskoff, 2005; Vaughn, Mathes, Linan-Thompson and Francis, 2005). The current research has shown its effectiveness as reported by the teachers. Similarly, Ehri's (1991, 1994, 1995, 1998, 1999, 2002, 2005) research showed that this is the best way to bring about sight word reading. When grapheme phoneme connections are consolidated and decoding skills are internalized new words are retained in memory since decoding works as a self teaching mechanism (Share, 1995, 1999). This approach also brings about improvement in spelling. Although students with dyslexic characteristics find difficulty with spelling (Bos and Vaughn, 2006) an explicit approach brings about improvement (Wanzek, et al., 2006) and therefore this approach is beneficial for them. Further, it has been contended that explicit instruction works for all children

including those at risk for failure (Foorman, et al., 1998; Snow, Burns, and Griffin, 1998; Juel and Minden-Cupp, 2000).

Thus, the deepening of the understanding of the process of reading and the application of new practices enabled the teachers to change their methods and help the students with dyslexic characteristics to learn how to read and write.

Using a multisensory approach

The teachers also acknowledged the importance of multisensory teaching and the application of multisensory aids in their practices. Multisensory input can maximize the application of an intervention programme (Lane, Pullen, Hudson, and Konold, 2009). Other researchers also found that novice ESL students learned to read when their teachers used a multi-sensory approach (Lesaux and Siegel, 2003; Vaughn, Mathes, Linan - Thompson and Francis, 2005). Additional studies recommend the application of a multisensory approach for the teaching of a foreign language (Kenneweg, 1988; Myer, Ganschow and Kenneweg, 1989; Sparks and Ganschow, 1991). Ehri and McCormick (1998) recommend using visual associations to remember the vowel spelling system as well as multi-sensory mnemonics to iron out difficulties between confused letters such as the consonant **b** or **d.** Furthermore, Ehri and Roberts (2006) advocated the use of action mnemonics which are actions carried out by the child in order to make associations between the name of the letter and its sound.

On this basis, the EMPI programme initiated the use of cards and the teachers said that they had adopted them in their lessons. The programme stressed the use of different senses to assure the consolidation of grapheme phoneme correspondences and to strengthen memory. The teachers generated many original ideas and used them in the practical session they taught.

In sum, the EMPI programme provided practical multisensory ideas and tools which were found to be effective for struggling readers in EFL.

Monitoring student progress

It is the responsibility of the teacher to determine where a child has difficulties and carry out suitable solutions (Kamps, et al., 2008). This is important since first grade reading ability is an indicator of 11th Grade outcomes (Cunningham and Stanovich, 1997).

Therefore, a noteworthy finding of this research was the fact that half of the teachers had internalized the importance of monitoring their student's progress with a graph or chart. O'Connor, Fulmer, Harty and Bell, (2005) believe it is possible to reduce reading difficulties when teachers undergo PD and monitor student progress during intensive intervention. Minskoff (2005) also explains that students should be assessed prior to the commencement of an intervention programme and at the end to determine if the student has internalized the skills. Student assessment is overlooked in the Israeli system even though it is of extreme importance. The results of this research implied that the teachers never gave this process thought in the past. They were unaware of the need to apply assessment thoroughly enough in an intervention framework, and they seldom assessed the reading ability of their students in the regular classroom.

Teaching vocabulary

The main objective of intervention is to teach the child to read and ultimately to be able to comprehend (Minskoff, 2005). If intervention is provided early enough students with dyslexic characteristics can attain the reading level of their peers (Clay, 1985; Vellutino, et al., 1996; Torgesen, et al., 1999; Foorman, 2003). Intervention programmes do not usually teach vocabulary but concentrate on teaching decoding and developing word recognition. The EMPI programme is geared towards the child with dyslexic characteristics who is learning EFL. The necessity to teach vocabulary emerged from criticism from the teachers themselves. They felt that they needed to incorporate vocabulary acquisition within the framework of teaching the basic sounds. Consequently the teaching of vocabulary is an additional characteristic of the lesson plan. A list of words is presented for word recognition and spelling. Five words on the list are taught for meaning in addition to decoding. The results of the research showed that teachers said that after the programme they were constantly teaching vocabulary (86%).

Their adherence to the teaching of vocabulary is still very strong. FL learners need to acquire the basis in vocabulary artificially and EFL teachers find it very difficult to overlook this skill. As a result of the EMPI programme, they understood that emphasizing vocabulary acquisition only, without an emphasis on the acquisition of grapheme phoneme correspondences will not consolidate the basis to learning how to read. In accordance with the requirements of the Ministry of Education aural/oral work must be taught before children learn how to read so that they consolidate basic vocabulary and structures. Furthermore, phonemic awareness must be strengthened and students must receive basic exposure to phonics (Amdur, et al., 2009). Therefore vocabulary items that are integrated with the sounds taught on the phonics programme are also taught for meaning. The student is therefore able to read and write the word but understand the meaning of five items for practical application. This was an innovation of the EMPI programme. In the study carried out by Tam, Heward and Heng (2006) they found that vocabulary instruction had been de-emphasized even though it is important for reading comprehension. This was not the case in this research and is significant in terms of learning to read in EFL. Vocabulary acquisition is an on-going process and should be incorporated in intervention as well. The foreign language learner has additional needs which should not be overlooked and intervention programmes should be modified accordingly (Manyak and Bauer, 2008)

In sum, the PD programme provided the teachers with practical tools which they applied in their teaching, in an intervention framework and eventually in the regular EFL classroom. They added a multisensory, success orientated lesson plan and applied a cumulative, systematic explicit approach to their teaching repertoire. Furthermore they innovated the monitoring of their students' progress and vocabulary acquisition. Their change in practices grew out of the knowledge acquired on the programme. They demonstrated that the process of PD changes practices (Guskey 1986, 2002; Ingvarson, Meiers and Beavis 2005; Garet, et al., 2008) and is necessary to bring about student academic attainment.

6.3.14 Application to the General Population and Beyond Elementary School

The participating teachers have begun to utilize intervention methods in their regular classroom teaching. This is important because once they had the understanding and practices they felt confident enough to choose what was relevant to their needs in the regular classroom as well. One of the interviewees explained how she succeeded with individuals and small groups and then made the application of the same principle to her regular elementary classroom. She found that the use of a phonics approach together with multisensory input was successful for all students. Successful student outcomes gave her the confidence to apply the same approach in a larger forum. When teachers have quality knowledge it impacts their students' learning (Ferguson, 1991; Ferguson and Ladd, 1996; Darling-Hammond, 2000; Muijs and Reynolds, 2000; Wenglinsky, 2002), even beyond the specific context of the knowledge. The teachers were able to generalize the knowledge and utilize it to their own, wider, goals.

Furthermore, junior high school teachers and high school teachers chose to participate in the programme. They acquired tools to teach struggling readers, even though these were not beginning readers. In the past the teachers felt helpless and inadequate because they had not been trained to teach beginning reading. The programme provided an approach which gave them practical solutions. PD is the means to strengthen content knowledge and change classroom practices in a positive way (Wilson and Lowenberg, 1991; Birnam, Desimone, Garet and Porter, 2000; Garet, et al., 2001). The programme was geared towards teaching learners with dyslexic characteristics but from the findings teachers applied it in their regular classrooms and found it worked with older students as well. Ehri (1998) explained that readers learn sight words by making connections between graphemes in the spelling of the word and phonemes that underlie its pronunciation. The connections form as a result of the reader's knowledge of grapheme phoneme correspondences which occur again and again in lots of words. She recommends explicit letter- sound instruction and suggests new mechanisms for word recognition at each developmental stage. Teachers must provide instruction in all aspects of word reading that are relevant to the phase the child is at (Ehri, 1998). The EMPI programme provided the necessary knowledge and strategies that are in accordance with Ehri's theory, so that

reading can become fluent and automatic. When the teachers applied Ehri's Phase theory (1998) in their teaching they could reach the full spectrum of learners. This is one of the interesting results of the present research.

In sum, despite the absence of coaching and mentoring within the school systems, the teachers in this programme underwent PD which led to changes in practices. They functioned autonomously, and as a result of their commitment brought about changes in student attainment. They made specific changes in their practices such as the application of an explicit approach to success orientated lessons, taught using a multisensory approach. They continued to emphasize vocabulary acquisition and emphasized grapheme phoneme correspondences with it. Furthermore, several innovations were sustained such as the monitoring of student progress and the transfer of the phonics approach from an individual framework to the regular classroom to reach the complete continuum of learners. Junior high school and high school teachers began teaching the essentials of beginning reading at all levels according to need.

6.3.15 Student Outcomes

High quality PD should change teachers' practices and bring about improved student attainment (Guskey, 1986, 2002). This may emerge once teachers acquire basic subject knowledge (Shulman, 1986b). PD is regarded as the best way to achieve student outcomes (Cohen and Hill, 2001) and this is essentially its main aim (Guskey, 1986, 2002; Supovitz, 2001; Holloway, 2006; Munoz, Guskey and Aberli, 2009). When teachers learn new instructional procedures and utilize them in the classroom, students' learning is likely to improve (Guskey, 2005).

The aim of the EMPI programme was to provide PD which would eventually produce better student outcomes. However, in order to determine if the students have progressed, a longitudinal research should be carried measuring their attainment (Meiers and Ingvarson, 2005). Such research was not conducted in this research. The aim of this research was to ascertain whether impact had been left on the PD of the participants in the EMPI programme. The focus was on how and if the teachers had been influenced and in which specific areas. Intuitively it was thought that the teachers had gained a great deal

from the programme but scientific backing was needed to validate these ideas. Hence the questionnaire that was administered was directed at the teachers themselves Separate studies need to be conducted on the student outcomes after a reasonable amount of time has elapsed. The response to student outcomes emanated from the interviews with teachers and open questions in the questionnaires which they completed. Hence they reflected the teacher's subjective opinions.

In the current research several teachers described their own observations and the results they saw in their students' learning. They felt that they had succeeded in teaching their students to decode better and in their opinion fewer students were falling behind. The EMPI programme had taught them practical tools and their application in the field, and according to these teachers, this was indicative of improved teaching leading to greater student literacy. Skilled and knowledgeable teachers produce positive student outcomes (Hargreaves and Fullan, 1992). Results indicated that they were of the opinion that their students' attainment reflected their improved teaching ability. Teachers measure their success in terms of student attainment (Harootunian and Yarger, 1980; Fullan and Hargreaves, 1996; Fullan, 1999). Another result was student change in self efficacy which, according to some teachers improved. Both are discussed here with the reservation that they were not measured directly. The questionnaires in this research did not focus on student outcomes but hoped to see the impact left on the teachers themselves.

6.3.16 Change in Student Attainment

Insufficient studies have been carried out showing the connection between PD and student attainment (Supovitz, 2001; Wilson, Floden, and Ferrini-Mundy, 2001; Sykes, 2002; Wayne and Youngs, 2003; Borko, 2004; Clewell, Campbell and Perlman, 2004; Meiers and Ingvarson, 2005). It is intuitive and logical that PD affects student outcomes, yet it not easy to prove (Supovitz, 2001; Borko, 2004). For every teacher who participated in the programme at least one whole class of student outcomes needs to be evaluated at the beginning of the school year and then at the end. A comparison of the results would show if there are significant changes. The teachers are not a homogeneous

group and a carefully planned research has to be carried out. Also, a reasonable period of time between the pre-test and the post test must elapse. This was beyond the scope of the current research, which focused on the professional development of the teachers.

Descriptions of the impact of PD on student outcomes are limited (Guskey and Sparks, 2002). However, in recent years studies have begun to show a connection between PD and student achievement. Lowden's (2006) study supports Guskey's model of teacher change since he found that PD brought about changes in knowledge, practices and student attainment. Yoon, et al. (2007) showed an improvement is student outcomes when teachers took part in PD programmes of at least 49 hours duration. Wallace (2009) and Harris and Sass (2007) also saw student achievement after PD. Broaddus and Bloodgood (1994) saw improved student outcomes when they applied teaching practices to a reading intervention programme and deepened their understanding of the difficulties facing struggling readers. Nevertheless, in the study carried out by Garet, et al. (2008) the researchers found that neither intervention programme brought about higher test scores after a year or left a statistically significant impact during the year that followed intervention on student outcomes. This shows that in spite of the fact that teachers acquired knowledge and used new practices the area of student attainment did not show noteworthy outcomes but needed further in depth study. In this research, subjective opinions given by respondents reported positive changes. Student attainment is an important area that needs thorough research since some results reflect improvement (Wallace, 2009) whereas others could not show conclusive statistic proof that the academic achievements of the students had improved (Garet, et al., 2008). The final aim of PD is to bring about improved student attainment and raise educational standards. In the future, in-depth studies should be carried out on the academic improvement of the students.

It is agreed though, that when children are given appropriate instruction almost all of them can become readers (Mathes and Denton, 2002; Denton and Mathes, 2003; Lyon, Shaywitz and Shaywitz, 2003). Early intensive intervention can bring about improved reading achievement (Coleman, Buysse and Neitzel, 2006; Denton, Fletcher, Anthony, and Francis, 2006). Furthermore, reading achievement at the early stages is an indication

of ultimate reading success or failure (Stanovich, 1986; Juel, 1988; Torgesen, 2004). Haager (2007) explains that when students are identified as early as possible the impact of the learning disability can be reduced and there is a possibility that they will reach the reading level of their peers. Therefore, good teaching practices can bring about student improvements. High quality PD must be planned to provide input that correlate with needs of teachers in their daily work.

The EMPI programme broadened the teachers' theoretical understanding of the reading process and familiarized them with the phonics approach. They also acquired practical tools which they could apply in their teaching. This correlates with the findings of Ingvarson, Meiers and Beavis (2005). They concluded that when teachers understand the content they teach and how their students learn it, then the teachers will find meaningful ways to present it so student outcomes will improve. In the current research, for methodological reasons, the teachers were not asked about change in student attainment directly, yet some chose to emphasize it, and it is likely to have occurred in other cases as well. Good teacher education and teaching by excellent, knowledgeable teachers affect student outcomes (Darling-Hammond, 2000) and are the most important factors for student attainment (Putman, Smith and Cassidy, 2009). The respondents found that the incorporation of phonics into their teaching repertoires enabled them to teach their pupils to learn how to read particularly those who were at risk. They found the method was suitable for all their students and left them with a feeling of success. Studies have shown that at risk children benefit from a systematic phonics approach (Hatcher, Hulme and Snowling, 2004). Phonics develops word identification skills (Perfetti, 1985; Feitelson, 1988; Adams, 1990, Chall, 1997; Snow, Burns and Griffin, 1998; NRP, 2000). Children will be able to move from the partial to the full alphabetic phase as described in Ehri's Phase Theory of Sight Word Reading (1991, 1994, 1995, 1998, 1999, 2002, 2005) if they are taught phonics**.** Furthermore, the phonics approach works for L2/EFL learners (Fitzgerald,1995).

Not all students master the task of learning to read easily (Moats, 2000; Bursuck and Damar, 2007; Gallant and Schwartz, 2010). Once teachers in this research adopted the phonics approach some reported an improvement in student outcomes. This shows that

the change in their practices and knowledge led to better results. PD programmes should change practices (Andreasen, Swan and Dixon, 2007). The teachers said that almost all the weakest students managed to grasp basic decoding skills and showed improvement in their mastery of the essentials of beginning reading. According to Chall (1967, 1983, 1996) the full spectrum of learners will be able to learn how to read if a phonics approach is used. The phonics approach is the basis of the EMPI programme and works for struggling readers. Phonemically explicit instruction taught systematically and intensively works for struggling and at risk readers (Foorman, et al., 1998; Foorman and Torgesen, 2001),

This research was carried out after a minimum of three years had elapsed since teachers had participated in the programme and the teachers described student improvement in the following terms. As a result of having participated in the programme, EFL teachers used a phonics approach to teach reading and applied the same principles that are used in L1. They understood more about the process of learning to read and had the tools to cope with the difficulties. According to the LCDH (Sparks and Ganschow, 1993a, 1993b; Sparks, Ganschow and Patton, 1995) the same difficulties found in the components of reading in L1 will also be reflected in FL. The teachers expressed their feelings clearly and said that they were equipped to carry out the practical teaching and that the students' outcomes showed that they were successful. FL learners also improve when they are given intervention. Gunn, et al. (2005) found after two years of intervention the Hispanic students showed improvement equivalent to that of their non-Hispanic peers. In the study on the impact of professional development programmes (Ingvarson, Meiers and Beavis, 2005; Meiers and Ingvarson, 2005) the researchers came to the conclusion that the duration of the programme is significant and time is needed for teachers to understand influences on their practices which lead to student attainment. They explained that if one wishes to evaluate the impact of PD on student outcomes "*a longitudinal view of change is needed*" (Meiers and Ingvarson, 2005, p. 4). Garet, et al. (2008) also reported that after a year they did not have significant results reflecting student attainment. This research evidenced similar results. Some teachers commented in the open questions and unstructured interviews that the reading standard of their students had improved but no effort was made to collect statistical data and analyse it.

The fact that teachers described student attainment is important particularly since the research examined the impact on the PD of EFL teachers. Change in practices had been sustained since teachers had internalized different aspects of teaching that characterized this programme. They taught phonics systematically using a success orientated approach and monitored their students' progress. When all these mechanisms came together they said, that they could see changes in student attainment. Further longitudinal scientific proof should be provided in the future to show the impact on student outcomes.

6.3.17 Change in Students' Sense of Self Efficacy

According to Bandura (1993, p. 144) "*a strong sense of efficacy enhances personal accomplishment*". An interesting observation by several teachers in this research was that they saw a change in the students' feeling of self efficacy. Struggling readers who have undergone negative learning experiences in the past and failed to experience success are unmotivated and their low aspirations may bring about poor academic performance. The teachers understood the necessity of finding a way to enable the students to believe in themselves and break the circle of failure. When teachers have a sense of self efficacy they affect student outcomes which include student achievement (Armor, et al., 1976; Ashton and Webb, 1986; Moore and Esselman, 1992; Ross, 1992) and motivation Midgley, Feldlaufer and Eccles, 1989), in addition to the student's own feeling of self efficacy (Anderson, Greene and Loewen, 1988). When students experience success and feel that they are learning they are left with a feeling of positive self efficacy. Once they find themselves on the road to success they are encouraged to carry on and to believe in their ability. This is the only way to break the cycle of failure and to weaken Matthew Effects (Stanovich, 1986). This important issue was not researched but emerged from the research. More studies are required that will examine the effect of teacher PD on student outcomes – including both attainment and self efficacy.

In sum, the aim of PD is to bring about improved student attainment but results are limited and were not part of this research. However, the EMPI programme provided a systematic phonics approach over a reasonable period of time. This enabled the

respondents to carry out intervention which they claimed led to student achievement and improved student self efficacy.

6.3.18 Change or Confirmation of Beliefs

According to Speer (2005, p.361) "*Beliefs appear to be, in essence, factors shaping teachers' decisions about what knowledge is relevant, what teaching routines are appropriate, what goals should be accomplished, and what the important features are of the social context of the classroom.* " Guskey (1986, 2002) claimed that PD brings about changes in practices and student learning outcomes which lead to changes in teachers' beliefs. In the response to the open ended questions in the second questionnaire teachers reported that their beliefs had undergone changes as a result of the EMPI programme thus indicating that a change or confirmation of beliefs only comes after the practices change and teachers see a change in student learning outcomes. This is in direct correlation with the Guskey's model of PD (1986, 2002). Teachers' beliefs are the personal constructs that can provide an understanding of a teacher's practices (Nespor, 1987; Pajares, 1992; Richardson, 1996). The majority of the teachers (almost two thirds) reported that their beliefs had been affected to a great extent. An additional group which made up almost 30% also said that their beliefs had changed somewhat and only 6 teachers claimed that there was a small change or no change at all Therefore most teachers reported an impact on beliefs which was the final outcome of the PD they had undergone. Likewise, Richardson (1996) found that impact was left on the beliefs of experienced teachers as result of opportunities provided by PD. This correlates with the order of change described in Guskey's model (1986, 2002), starting from change in practices moving to student learning outcomes and ending with change it teachers' beliefs and attitudes. For some teachers it was a change in beliefs, which they described either in general or in specific terms, and for others it was a confirmation of beliefs that they intuitively held.

6.3.19 General Changes in Beliefs

The teachers underwent a process during the programme which led to changes in their beliefs. As a result of their PD they had been left with impact on their ideas about the teaching of reading. According to Guskey's model (1986, 2002) PD leaves an impact on

the teachers' beliefs if they receive content focus and active learning as described by Garet, et al. (Garet, et al., 2001; Garet, et al., 2008). This was implemented in the EMPI programme as the teachers learnt how to teach phonics actively, which provided them with practical tools and methods. As a result, their beliefs changed. Stipek, Givvin, Salmon and MacGyvers (2001) concluded that PD will be successful if attention is given to both practices and beliefs since they are connected. This accords with this research in that the teachers found they could reach the full spectrum of learners in the field and improve student outcomes. They expressed the belief that their understanding of the process of reading had changed and they were teaching better. Furthermore, they believed that their use of phonics was the correct approach to teaching beginning reading. Research on teachers' beliefs has been underpinned by the supposition that a person's behaviour originates in their beliefs (Ajzen and Fishbein, 1980; Pajares, 1992; Cooney, 2001). Luft and Roehrig (2007) explained that beliefs are a critical component of the understanding of teachers' practices. However, according to the model of teacher change described by Guskey (1986, 2002) as well as Fullan's (1993) opinion and the results of Levin and Wadmany (2005), changes in practices take place prior to change in beliefs after classroom experience. Hawley and Valli (1999) also said that improved student attainment in the classroom can produce changes in beliefs. Thus, as a result of the current research and in accordance with Guskey's model the process of change seems cyclic, namely that beliefs and practices interact to affect each other.

As a result of the programme the teachers felt confident enough to defend their beliefs about phonics even though the whole language approach was still required. This is contrary to the study carried out by Block and Hazelip (1995) who said that beliefs are resistant to change. The teachers in the current research learned how to apply a structured explicit way of teaching and as a consequence some of their beliefs changed, or beliefs they held intuitively were confirmed. The overall majority felt that they had come a full circle in their PD resulting in confirmed or changed beliefs.

Beliefs about the usefulness of using an explicit structured approach

The programme created or confirmed the belief that an explicit, multisensory approach to reading is the best method of instruction for beginner readers. The teachers also acknowledged their belief in constant reinforcement and in using success orientated lessons. In the past some of them had used this approach intuitively, based on personal experience. Now they understood what and why they were doing certain things and developed the belief that this was a more effective way than what they had used in the past. Teachers make decisions based on their beliefs (Rokeach, 1968; Bandura, 1986; Kagan and Smith, 1988; Lonberger, 1992; Fang; 1996; Richardson, 1996; Stuart and Thurlow, 2000). Several studies have shown the effectiveness of explicit instruction (Swanson, 1999; Vaughn, Gersten and Chard, 2000; Gersten, Fuchs, Williams and Baker, 2001; Carnine, Silber, Kame'enui and Tarver, 2004; Vaughn, Mathes, Linan-Thompson and Francis, 2005). The teachers learned how to apply a structured explicit way of teaching and seeing its effectiveness they developed beliefs in its usefulness and relevance. Some teachers added that the programme confirmed and strengthened their beliefs about phonics. They had been using the approach and the programme provided the justification. The beliefs of teachers both in-service and pre-service influence their teaching (Ashton and Webb, 1986; Winfield, 1986; Kagan and Smith, 1988; Lonberger, 1992; Fang, 1996; Richardson, 1996; Solomon, Battistich and Hom, 1996) and results seen in teaching influence their beliefs.

Beliefs that all children can learn how to read

The teachers came to the realization that they had to account for the full spectrum of learners when they taught in class. As a result of the programme they felt they could do so because they had the tools and the correct approach to teach different populations. The programme had given them the practical tools to solve problems they were facing in the field. Instructional, in addition to situated, events are sometimes catalysts that bring about changes in beliefs (Wolf, Carey and Mieras, 1996a; Matanzo and Harris, 1999; Fazio, 2000; Stevens, 2002). The teachers developed the belief that all students can internalize reading. Teachers' beliefs influence the feeling of responsibility that they have for their

struggling readers (Soodak and Podell, 1994; Winfield, 1986). Their attitude to their students had also changed because they started seeing positive changes. Successful student outcomes led to a change of beliefs.

In sum, the teachers' general beliefs about reading changed or were confirmed as a result of changes they implemented in their practice. They also underwent specific changes in their beliefs related to specific aspects of an explicit approach to reading. Finally, they changed their beliefs about struggling readers and saw that they could be taught how to read with the correct method. As a result of the teachers' participation in a **process of professional development** they underwent a full cycle **from negative to positive self efficacy.** In this process they acquired knowledge, their practices changed, student outcomes improved and the teachers' beliefs about literacy acquisition changed or were confirmed.

6.4 Limitations of the Research

This research, about the process of professional development of EFL teachers, and the impact it had on their self efficacy, has several limitations.

Self selective sample

All the participants in the programme were in-service teachers who took part out of personal choice. This reflects their commitment and internal motivation. They were therefore probably more likely to view it in a positive light since their aim was to gain knowledge and practical tools. The VITAE Study (2001-2005) carried out by Day, et al. (2007) showed that committed teachers attained expected or improved results. This was also found in the results of this research.

In the near future the programme will become part of the compulsory basic training of pre-service students training to become EFL teachers. It would be advisable to repeat the research on this group every few years and to see if the outcomes are similar.

Response out of choice

The researcher chose to send Questionnaire #2 to all the teachers (170) who had participated in the EMPI programme from 1991-2005. She did not choose to send it to individual teachers or a specific group. However, 64 responses were received, after a significant period of time had elapsed since their participation in the programme, and served as the basis to analyse the findings. The respondents could have answered for several reasons which could have had an impact on the results.

Further, the teachers were not pressured into providing responses. They received the questionnaire in the post and answered in their own time. They could have been motivated because they worked with struggling readers and experienced a degree of success. They could have felt responsibility to some extent towards the researcher, in which case social desirability (i.e., the tendency of individuals to provide responses they believe to be consistent with social norms) would be a limitation. On the other hand there were teachers who no longer worked in the system and provided retrospective responses to their work in the past. They had been left with a positive feeling and wanted to convey these sentiments. Those that chose to respond possibly perceived the programme positively and could have reflected a degree of bias.

Nevertheless, more than 100 teachers did not respond to the questionnaire at all. It is possible that they were successful but it is impossible to know. Teachers who had failed may have decided not to respond to the questionnaire that was sent to them. Therefore no negative results were reported (regarding Questionnaire #2) even though there is a possibility that they existed.

Retrospective responses

Teachers who completed the programme at different times answered the questionnaire. Some were after three years whereas others had finished at least ten years previously. A significant period of time had elapsed in some cases and they may have provided answers based on selective memory. This may have led to a positive impression since they had forgotten or overlooked negative aspects.

Validity of the Process of PD Questionnaire (#2)

The researcher composed the questionnaires #2 and did not use an already made, valid questionnaire. Its validity would have been enhanced if other valid questionnaires had been incorporated such as a questionnaire on self efficacy or PD. The questionnaire was piloted with several past students and revised accordingly. However, in retrospect, several content areas, such as teacher learning, student learning and commitment could have been emphasized better.

Validity of the Knowledge Questionnaire (#1)

As it may be recalled from the methodology chapter, the researcher based the content of Questionnaire #1 on two other existing questionnaires: the Phonics Quiz (Lerner, 1989) and the Informal Survey of Linguistic Knowledge (Moats, 1994). The original questions were either retained or slightly changed, assessing the same concepts. Relevant examples were used, that differed from the original ones. The questionnaire (see Research Methodology Chapter 4) was piloted with an EFL teacher and several past students. In retrospect, questions #7 and #15 should be removed because the answers were obvious. Other questions assessing phonemic awareness and the ability to manipulate sounds in words should be added, such as: "what is the third speech sound in the word 'vision' ", as well as questions related to morphology.

Student outcomes

The direct outcome of PD is improved student outcomes but was not the focus of this research. Student outcomes were beyond the scope and boundaries of the present research. Although the respondents provided their own subjective opinion that they saw improvement in their students learning there are no valid research results to support this supposition. In the future research should be carried out focusing out on student attainment.

The dual role of researcher and lecturer

In this research the researcher took on a dual role of both researcher and teacher. She decided to evaluate the basic knowledge related to the structure of the English language and its relevance to phonics. The questionnaire was administered to the full continuum of EFL teachers from pre- service students to veteran in-service teachers. The intention of the research was to see how much knowledge teachers of literacy have. The hypothesis was that their knowledge was not very well established and possibly similar to the findings of Moats (1994) in L1. Each group of teachers or students was taught material covered in the questionnaire as well as four sessions related to the teaching of spelling rules.

The role of the researcher could have impacted on the lecturer. The researcher was aware of the fact that this knowledge, covered in the questionnaires, was lacking and maybe subconsciously placed more emphasis on the related issues so that improvement could be seen at the post test stage. However, the leading guideline throughout the programme was that purposes and procedures of the research were not to interfere with teaching goals. Teaching goals and the students themselves always remained first priority. She continued to teach the relevant material in the same way she had planned and carried out this task as in the past. The same activities were carried out in class and the powerpoint presentations remained the same. The only conscious effort that was made to focus the students on the importance of these issues was the fact that a quiz was given on both the phonics concepts and the spelling rules. This had not been done in the past. The researcher came to the conclusion that if she wanted to be sure that enough effort had been put into the consolidation of this content knowledge then the students or teachers had to be tested and the mark had to be included in their final programme evaluation. Past experience had taught her that if they were not tested there was a possibility that less effort would be put into retaining this knowledge. It was important for her to know that the material was taught thoroughly and retained as well as possible.

Generalizability

The conceptual framework of this research was based on three models of PD (Guskey, 1986, 2002; Ingvarsen, Meiers and Beavis, 2005; Meiers and Ingvarsen, 2005; Garet, et al., 2008). This research showed that the process of PD is similar to various groups of pre-service and in-service teachers and can be incorporated in the planning of PD for EFL reading teachers. When teachers are unsuccessful and feel negative self efficacy, but receive basic content knowledge, their practices and beliefs change and their PD is accelerated. This thesis has shown that this is possible.

Although the programme was carried out in two academic colleges in the North of Israel it can be taught elsewhere. The results of the research seem to be generalizable, or transferable, to EFL teachers across Israel. The basic requirements of training in synthetic phonics are the same across the country. The population of foreign language English teachers exists and could be trained to apply the same approach. The difficulties in the field are similar. Therefore, the results of the research seem to be generalizable across Israel. Generalizability, or transferability, beyond Israel, for other countries and languages, as well as to other professions, should be examined rather than presumed.

6.5 Summary

In sum, the EFL teachers underwent a process of **professional development**. **Negative self efficacy** led them to make an autonomous decision, based on their professional commitment, to participate in the EMPI programme. The process undergone was found coherent with the conceptual framework of this research. It culminated in **positive self efficacy**. During the process knowledge improved, practices changed, beliefs were altered or confirmed, and student outcomes were likely to have improved. As part of the process the teachers considered themselves professionals and learners for life, and acknowledged the fact that they had grown both professionally and personally. The discussion has shown that the process of professional development that the teachers who participated in the EMPI programme underwent was compatible with the integration of the three PD models that served as the conceptual basis for this research (Guskey, 1986, 2002; Ingvarsen, Meiers and Beavis, 2005; Meiers and Ingvarsen, 2005; Garet, et al.,

2008). The content knowledge and the pedagogical knowledge they acquired, according to the two other models of this research (Ehri 1991, 1994, 1995, 1998, 1999, 2002, 2005; Adams, 1990, 2003) provided them with a solid basis to teach phonics in both intervention frameworks and regular classrooms. Furthermore, the discussion showed the inherent relationship that the process of professional development has with self efficacy. Self efficacy was at the basis of the process and was its end as well. Thus, the research not only showed how models of PD from various content areas can be integrated empirically to analyze the PD of EFL teachers teaching literacy acquisition, but also the centrality of self efficacy in the process.

The concluding chapter that follows sums up the conceptual conclusions and practical applications of this study.

7. Conclusions and Implications

7.1 Introduction

This research investigated the impact of the EMPI programme on the process of professional development of the participating teachers. A sense of negative self efficacy set the process of PD in motion, and a central outcome was the teachers' sense of positive self efficacy. Further, a survey of the literature showed that no specific model describing the impact of the process of PD on EFL teachers existed. Therefore, the research aimed to provide a model of PD for EFL teachers that would analyze the areas of impact, including the sense of self-efficacy. The conceptual model of the research is based on three theoretical models of PD with the addition of the concept of both negative and positive self efficacy. These theoretical models are a 'model of teacher change' (Guskey, 1986, 2002), a model of 'relationships between structure, learning processes and impact of professional development programs' (Ingvarson, Meiers and Beavis, 2005; Meiers and Ingvarson, 2005), and the 'Theory of Action for the Early Reading PD Interventions Study' (Garet, et al., 2008).

A gap in knowledge existed as the concept of negative self efficacy was not included in previous models and studies of PD, and there was no conceptual model demonstrating the impact of the process of PD on EFL teachers. Further, research about this process was lacking, as most studies of PD have been carried out on science and mathematics (Desimone, et al., 2002) or reading (Garet, et al., 2008). This research closed the gap in knowledge by showing how the integration of three models related to PD and including the concept of self efficacy, formed the basis to a conceptual framework of the impact of the process of PD of EFL teachers. This innovative research, on the impact of the process of PD of EFL teachers, showed the centrality of self efficacy to PD and that the same components found in other models are essential to the PD of EFL teachers. These components, which appeared in a linear format in previous models, take on a cyclic pattern in the model developed in this research.

The teachers in this research underwent a process of PD during their participation in the EMPI programme. They consolidated knowledge, changed their practices, claimed to have seen improved student attainment, and changed or confirmed their beliefs about literacy acquisition and dyslexia. Their sense of negative self efficacy transformed into positive self efficacy. They went through the same order of change as described by the three theoretical models underlying this research (Guskey 1986, 2002; Ingvarson, Meiers and Beavis, 2005; Meiers and Ingvarson, 2005; Garet, et al. 2008) to achieve the major outcomes of PD. The results of this research and their discussion showed that the integration of these three models is necessary, as the explanation of the impact of the process of PD is not complete without all three of them.

According to Guskey's model (1986, 2002) the teachers learnt new practices which they applied in their classrooms, saw improved student learning outcomes, and changed their beliefs, yet they also changed their sense of self efficacy and acquired the very important component of knowledge, both of which are not a part of Guskey's model. Further, the results of this research and their discussion showed that impact was left in all areas outlined in the model developed by Ingvarson, Meiers and Beavis (2005); Meiers and Ingvarson (2005). They showed that if teachers received active learning and content focus, impact was left on knowledge, practice, student learning and teacher positive self efficacy, adding the central concept of negative self efficacy as the starting point. Likewise, the discussion of the results of this research showed that it adhered to most of the key features of PD (Garet, et al., 2008) and had the same outcomes as in the model proposed by Garet, et al. (2008). As in Garet's model (Garet, et al., 2008) PD led to improved teacher knowledge and changes in practices, that eventually may have brought about better student academic attainment, adding again the concept of self efficacy as well as teacher beliefs. That is, this innovative research integrated the three models of PD, added the concept of self efficacy as an impact of the process of PD, and moved from a linear format to a cyclic pattern describing the impact of the process of PD on EFL teachers.

7.2 Conceptual Conclusions

Several conceptual conclusions become apparent at the closure of this research.

The centrality of self efficacy to professional development

Self efficacy was found to be a key element in setting the process of PD in motion. Negative self efficacy was the main incentive which led the teachers to look for solutions to their difficulties in the form of PD. The final outcome was the establishment of a feeling of positive self efficacy.

Previous models of PD either excluded self efficacy or only related to positive self efficacy. The impact of the process of PD was left in the areas of knowledge, practices, beliefs and student attainment. The initial and final outcomes of the process of PD i.e. negative and positive self efficacy were overlooked. The process of change from negative to positive self efficacy is one of the contributions to knowledge that this research has made.

An empirically based model of PD of EFL teachers

An empirically based model of PD of EFL teachers was developed, which did not exist before. The model demonstrates a process that starts from negative self efficacy through the acquisition of knowledge and change in practices, perceived change in student outcomes, change or confirmation of beliefs, culminating in positive self efficacy. The impact that was left on the teachers' self efficacy, knowledge, practices and beliefs shows that they underwent a process of high quality PD.

The findings of this research supported the conceptual framework that was initially set. According to them, consolidated knowledge is the first stepping stone in the process of PD. It leads to changed practices which are then reflected in better student outcomes. These lead to changed beliefs and deeper understanding about teaching. This process of PD creates a confident, knowledgeable teacher who has the understanding of practices needed to bring about success. The conceptual model underlying the research, based on the integration of three models of PD (See conceptual model, figure 4), was empirically

supported. Thus, the conceptual model developed in this research is another contribution to knowledge. It is a new scientific model of the process of PD for EFL teachers. This model has been investigated in this research with a group of EFL Israeli teachers. Further reasearch needs to examine its application to additional professional populations.

The centrality of knowledge in the process of PD

Knowledge is the basis of any PD process and serves as a spring board to other areas of impact. The teachers' lack of knowledge led to student failure, resulting in the teachers' personal feelings of negative self efficacy. This research confirmed that acquisition and internalization of relevent knowledge brought about improved practices. Ehri (1991, 1994, 1995, 1998, 1999, 2002, 2005) and Adam's (1990, 2003) theories served as the theoretical basis for the content knowledge that the EFL teachers acquired. The results showed that once this knowledge was in place they were able to apply synthetic phonics successfully. The application of consolidated knowledge and practices resulted in more effective teaching in the classroom and the teachers' feelings of positive self efficacy. It became clear that knowledge should be a key area of impact in any model of PD.

7.3 Practical Conclusions and Implications

The process of PD and self efficacy

Use of PD programmes that follow the model that I conceptualized and empirically supported in this research can improve the standard of teaching and consequently improve teacher's positive self efficacy. Teachers with positive self efficacy apply more effective practices and are more committed to their students' success. This study showed that when PD is given to in-service and pre-service teachers they are able to provide high quality teaching and attain student improvement, which is the main objective of PD. I think PD programmes should be constantly available to meet teachers' needs, prevent the onset of student failure, and maintain teachers' positive self efficacy.

Planning and evaluation of the process of PD

Developers of PD programmes for EFL teachers or other areas must incorporate relevant content knowledge related to the subject that will be taught. This will assure the desired changes in practices and beliefs and bring about effective instruction. Moreover, relevant content knowledge should not only be a part of PD programmes but integral to (EFL) teacher training. PD programmes should be plannned and structured on the foundations of empirically based models. This is the best, and perhaps the only way, to assure that the programme meets its goals. Furthermore, PD programmes should be accompanied by short term and long term evaluation research. This will show the effectiveness of each programme and allow for educated comparisons between them. Planners of PD processes will then be able to choose the model that best meets their needs. PD programmes must be both empirically based and evaluated.

Mentors or coachers should accompany the process of PD as the teachers participate in the programme. They will observe the teachers in the classroom and assure the effective application of knowledge and practices taught in the PD sessions. They will also be able to help the teachers overcome difficulties and sustain innovative teaching practices that have been taught. This way the coachers will monitor the application of the knowledge and practices acquired in the classroom. This will provide the coherence between what has been taught in the PD process and its practical use in the field, and assure alignment with goals and official standards. At the same time it will assure the maintenance of the impact of the process of PD, and the stability of the teachers' positive self efficacy.

Further, in order to maintain the momentum of the impact of the process of PD further sessions including study days and conferences should be offered. Teachers should be able to meet and be exposed to new research findings and updated ideas. This will promote their professional growth and provide continuity to the PD process.

In sum, the application of a PD programme, as conceptualized and examined here, should be useful to both teachers and students, and its adoption by the The Ministry of Education and the English Inspectorate may boost the teachers' professional growth and self efficacy significantly.

7.4 Reflection

As a teacher who has worked for many years in the field, carrying out this research showed me that it is most important to research practice in order to improve it. Futher, it showed me that research of practice must be theoretically based in order to connect with existing knowledge and arrive at solid and valid conclusions. Using the theories in my research raised it to a new level of conceptualizaton and likewise increased my understanding of the results. Along the same lines, it led me to realize that empirical data regarding practice should be collected throughout the years. They are good means for research and enable a broad longitudinal perspective. Conducting the research and writing the thesis taught me abut the relatedness of practice, theory and research, and about the great benefit that practice may gain from integrating it with theory and research.

From the outset the EMPI programme was plannned to provide a strong basis of content knowledge in addition to providing practical ideas and tools for the teachers. The research confirmed that knowledge is the focal point of PD and sets the process in motion. It led me to realize that knowledge was more important than I had originally thought and I currently understand its significance in the process of PD.

On the conclusion of the research I realized that, just like the teachers who had participated in the EMPI programme, I **too** had undergone a process of PD. I had developed an innovative programme which had evolved out of my own negative feelings about how I was teaching. Teaching the programme led me to study and develop further so my own professional development turned me into a teacher trainer. It enabled me to deepen my theoretical knowledge and develop new practices. As a result of this research my beliefs about both the process of PD and my own personal growth changed. I now realize that I had undergone a personal cycle of professional development. I had evolved from a practical classroom EFL teacher to teacher trainer with a deep appreciation of the importance of both theory and research.

7.5 Summary

In sum, both conceptual and practical conclusions confirm that self efficacy is an integral part of professional development. Knowledge is an essential, initial area of impact required for the process of PD to leave an impact in other areas. The empirically based model of PD that was developed and examined in this research, is a contribution to knowledge and can serve as the basis for future PD programme planning.

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Appendix 1: Definition of Dyslexia

(British Dyslexia Association 2010)

Dyslexia is a specific learning difficulty which mainly affects the development of literacy and language related skills. It is likely to be present at birth and to be life-long in its effects. It is characterized by difficulties with phonological processing, rapid naming, working memory, processing speed, and the automatic development of skills that may not match up to an individual's other cognitive abilities. It tends to be resistant to conventional teaching methods, but its effects can be mitigated by appropriately specific intervention, including the application of information technology and supportive counselling.

Definition of Dyslexia (Lyon, Shaywitz & Shaywitz 2003)

Dyslexia is a specific learning disabilit**y** that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge.

Appendix 2: Knowledge Questionnaire

Questionnaire on Reading and Spelling Terms (Roffman 2005)

Based on Lerner 1989 and Moats 1994

Part I: Phonics Quiz

Choose the correct answer.

1. Which of the following words begins with a consonant sound?

a) piano b) apple c) event d) out e) unite

2. A combination of two or three consonants pronounced so that each letter keeps its own identity is called a

a) consonant b) vowel pair c) schwa

d) diphthong e) consonant blend

3. A word with a consonant digraph is

a) stare b) blend c) send d) strict e) chest

4. A *soft c* is in the word

a) cone b) cape c) chide d) chimpanzee e) centre

5. A *hard g* is in the word

a) general b) go c) gin d) ridge e) giant

6. Which word contains a long vowel sound?

a) story b) send c) hall d) cream e) house

7. If *aik* were a word, the letter *a* would probably sound like the *a*

in

a) black b) make c) talk d) coat e) call

8. Which word contains a short vowel sound

a) great b) cart c) clip d) saw e) mail

9. A vowel sound represented by the alphabet letter name of the vowel is a

a) short vowel b) long vowel c) diphthong d) digraph e) schwa

10. An example of the schwa sound is found in

a) hidden b) morpheme c) stopping d) preview e) grouping

11. A diphthong is in the word

a) coat b) boil c) battle d) retarded e) slate

12.Which word contains a vowel digraph

a) soil b) amazing c) nappy d) cape e) boat

13. A word with an open syllable is

a) hike b) go c) spend d) butter e) it

14. A word with a closed syllable is

a) throw b) see c) why d) cow e) win

15.If *kly* were a word, the letter *y* would sound like the

a) *e* in peel b) *e* in set c) *i* in in d) *i* in isle e) *y* in baby

16. Phoneme Counting

Count the number of speech sounds or phonemes that you perceive in each of the following spoken words. Remember, the speech sounds may not be equivalent to the letters. For example, the word "spoke" has four phonemes:/s/,/p/,/o-e/,/k/.

Write the number of phonemes on the line.

drill_____ sing_____ shook_____

says_____ mix_____ shrimp_____

sawed_____ quack_____ know_____

17. Syllable Counting

Count the number of syllables that you perceive in each of the following words. For example, the word "higher" has 2 syllables, the word "threat" has one and the word "physician" has 3.

lighten____ shirt___

coil_____ banana___

talked_____ international___

<u>Part II: Spelling Rules</u>

1. A nonsense word that does not follow English spelling patterns is

a) thease b) boyn c) squite d) drow

2. Which word is an example of the spelling rule: when two vowels are written together the long sound of the first vowel is the only sound pronounced. (When two vowels go walking the first does the talking).

a) boil b) slit c) fail d) dame e) mouse

3. Which word is an example of the spelling rule: no original words in English end with the letter */i/*.

a) pie b) play c) toy d) try e) high

4. Which word is an example of the spelling rule: in words with a vowel-consonant-e pattern (VCe), the vowel frequently has the long sound while the *e* is silent.

a) please b) mouse c) flute d) cheese e) cable

Part III: Terminology

1. A Multisensory approach to reading emphasizes:

a) sight as much as possible.

b) memory as much as possible.

c) the use of as many senses as possible.

d) touch as much as possible.

2. Phonics is the application of _____to the teaching

of reading.

a) morphology

b) phonology

c) syntax

d) whole language

3.The smallest unit of sound represented in print is a:

a) morpheme

b) syllable

c) phoneme

d) grapheme

4.The smallest sound -bearing unit or a basic sound of speech is a;

a) phoneme

b) syllable

c) grapheme

d) morpheme

5. Phonemic awareness is the

a) conscious awareness of orthography.

b) conscious awareness of morphemes.

c) conscious awareness that words are made up of segments of speech represented by letters.

d) conscious awareness of whole language.

Thank you for your co-operation.

Appendix 3: Process of PD Questionnaire

Questionnaire #2

1. Why did you decide to take the course "Teaching Reading in English to Children with with Dyslexic Characteristics or Children at Risk"? (Check all answers that apply √).

	Because you felt you needed additional knowledge and ideas to improve your teaching in the regular classroom.
	Because you were on Sabbatical and needed to take an extra course.
	Because you were interested in teaching children with dyslexic characteristics how to read.
	Because you have a child with dyslexic characteristics of your own and you wanted to acquire more understanding of the problem and the difficulties facing the child.
	Because of your desire to see your pupils succeed.
	Because you felt it would contribute to your own personal satisfaction.
	Because of your desire to be considered a good teacher by others.
	Because of your desire to grow professionally.
	Because of your desire to make changes in your teaching environment.
	Because you felt the methods and tools you were using were not giving satisfactory results.

Other:

Elaborate_____

_____

_____

_____

2. What was your approach to teaching beginning literacy before you took the course? (Circle the appropriate answer(s).)

a) whole language

b) phonics

c) a combination of both phonics and whole language.

d) none of the above

Elaborate_____

_____

_____

3. Do you think the course has enhanced your knowledge of how to teach

reading more efficiently?

(Circle the correct answer).

4	3	2	1
Very much	to some degree	very little	not at all

4. Have your beliefs about the teaching of reading changed since you completed the course?

4	3	2	1
Very much	to some degree	very little	not at all

Elaborate:_____

_____

_____

_____

5. Are you still teaching within the education system? **Yes / No**

If you answer yes, where are teaching? _____.

If you answer no, why?

_____

_____

_____

6. Has the new knowledge acquired from the course given you confidence to make professional decisions about your teaching?

4 3 2 1

Very much to some degree very little not at all

Elaborate:_____

_____

_____

_____

7. Has the course changed your attitude and deepened your understanding of the problems faced by students with dyslexic characteristics and struggling readers?

4 3 2 1

Very much to some degree very little not at all

Elaborate:_____

_____

_____

_____

_____

_____

8. Has this course made you feel that teaching is a profession and not simply a job?

4 3 2 1

Very much to some degree very little not at all

Elaborate:_____

_____

_____

_____

9. Do you think the course has affected the way you teach beginning reading?

4 3 2 1

Very much to some degree very little not at all

If you answer yes please elaborate

_____

_____

_____

If you answer no explain why.

_____

_____

_____

10. Which aspects of the course do you incorporate in your teaching now? (Check one per line)

	very often	sometimes	hardly ever	never
a. Phonemic awareness				
b. Syllable division				
c. Phonics				
d. Fluency				
e. Onset and rime				
f. Spelling				
g. Multi-sensory teaching				
h. Morphology				
g. Vocabulary acquisition				
h. Word recognition				

If you have incorporated any other aspect(s) from the course please elaborate:

_____

_____

_____

_____

If you don't incorporate aspects of the course in your teaching explain why?

_____

_____

_____

_____

11. Since you have taken the course do you feel the need to focus on smaller units of knowledge? For example one letter /sound per lesson?

4 3 2 1

Very much to some degree very little not at all

Elaborate._____

_____

_____

_____

12. Since you have taken the course do you feel the necessity to teach cumulatively and to consistently recycle what has been taught? For example- after mastering a previously taught orthographic pattern (such as /ee/, /ay/) you move on to a new sound or letter according to a specific order.

4 3 2 1

Very much to some degree very little not at all

Elaborate._____

_____

_____

_____

13. Since you have taken the course do you feel the necessity to use success orientated materials? For example your lesson is structured to include consistent repetition based on a phonics approach.

4 3 2 1

Very much to some degree very little not at all

Elaborate._____

_____

_____

_____

14. Since you have taken the course do you feel the necessity to provide the child with reading materials on the level he/she can cope with? For example the use of booklets which recycle taught materials.

4 3 2 1

Very much to some degree very little not at all

Elaborate._____

_____

_____

_____

15. Have you initiated:

(Circle the correct answer).

a. the use of small readers or additional reading material for practice.	Yes	No
b. the monitoring of the reading progress of your students by listening and marking off the child's progress on a graph or chart.	Yes	No
c. the use of cards to teach grapheme phoneme correspondences and /or vocabulary.	Yes	No

Other:

Elaborate:_____

_____

_____

_____

_____

_____

16. Have you acquired additional qualifications in the field of dyslexia? (Circle the correct answer)

a. by studying for a higher degree in the field.

b. by studying to become a diagnostic assessor.

c. by obtaining a teaching certificate as an EFL teacher for children with special needs.

Other:

Elaborate_____

_____

_____

17. Have you managed to obtain:

a. additional hours for pre-teaching material being taught in the classroom

b. acquired assistance from a semi professional framework such as soldiers working as teachers or national service girls or pensioners.

c. parents, grandparents or volunteers to help teach reading within the classroom.

d. Other

If your answer is positive explain how you went about this. _____

_____

_____

_____

If your answer is negative can you explain why.

_____

_____

_____

_____

18. Within the framework of your school have you

a. been able to open a learning centre for students with dyslexic characteristics	Yes	No
b. been able to provide assessment for at risk students or students suspected of having with dyslexic characteristics within the school framework.	Yes	No

Other:

Elaborate:_____

_____

_____

19. Since you completed the course

a. do you teach students with dyslexic characteristics in a private capacity?.	Yes	No
b. do you work in a municipal or private learning centre?	Yes	No
c. do you teach a course related to dyslexia?	Yes	No
d. do you teach students with dyslexic characteristics at the junior high school or high school level?	Yes	No
e. do you teach or assess students with dyslexic characteristics at an academic level?	Yes	No
f. do you have a private learning centre of your own?	Yes	No
g. have you written a phonics reading programme that you use to teach in your own classes	Yes	No

Other .

Elaborate_____

_____

_____

_____

_____

Please complete the following:

Name: (not compulsory) _____

Year of participation in course:_____

Classes taught:_____

Years of experience: _____

Address: _____

E-mail address:_____

Do you teach in:

Arab sector: _____

Jewish sector _____

Do you teach in:

חנוך ממלכתי דתי

חנוך חרדי עצמאי

חנוך ממלכתי

חנוך פרטי

Other:

Elaborate:_____

_____

If there are any additional remarks you wish to make about the course in retrospect please feel free to express your ideas, feelings and / or criticism.

_____

_____

_____

_____

_____

_____

_____

Thank you for your cooperation,

Naomi Roffman

Address: 8 Amnon & Tamar Street,

Ramat Almogi 34791

Haifa.

e-mail: roffman_n@012.net.il

Telephone/fax: 04-8256180

Cell phone: 0546-709-601

Appendix 4: Definitions of Terms Used in the Chapter on Literacy Acquisition

Term	Definition
affix	A morpheme or meaningful part of a word attached at the beginning or end of the word.
Alphabetic principle (knowledge)	The idea that letters and letter patterns represent the sounds and sound patterns of spoken language, and that letters and sounds link in somewhat predictable ways. (Walsh, 2009 p.215)
Decoding (To decode)	Ability to translate a word from print to speech, usually by employing knowledge of sound-symbol correspondences; also the act of deciphering a new word by sounding it out. (Moats, 2004, p. 284)
Grapheme	A letter or letter combination that spells a phoneme; can be one, two, three or four letters in English (e, ei, igh, eigh) (Moats, 2004, p. 285)
High frequency words	These are the words that appear most frequently in text or speech. The ability to read these words adds to fluency. They include words such as *a; an; for, where was etc.*
Meta-linguistic	Pertaining to an acquired awareness of language structure and function that allows one to reflect on and consciously manipulate language (Moats 2000 p.233.)

Meta-linguistic ability	The ability to bring knowledge of the spoken language to bear upon written language; this requires the ability to reflect on the structural features of spoken language. (Center, 2005 pp. 266-267)
Morphology	The study of the meaningful units in the language and how they are combined in word formation (Moats, 2004 p.285)
Multi sensory	Involving three or more senses, usually visual, auditory, kinesthetic, or tactile. (Birsh, 1999, p. 498)
Multi sensory teaching	Applying multi sensory strategies to the learning experience. Intervention programmes that are explicit, cumulative and sequential and direct incorporate these strategies. This will enable the student to learn and later to recall information (McIntyre & Pickering, 1995)
LOTS	Lower order thinking skills are the basic mental processes that enable the acquisition and comprehension of knowledge that form the basis of higher order thinking skills. Learning to read and write are lower order thinking skills.
morpheme	The smallest meaningful unit of language (Moats 2005 p. 191)
Orthography	A writing system for representing language (Moats 2005 p. 191)

Onset-rime	The division of a syllable into two parts, the onset comes at the beginning of the word before the vowel (c-at c is the onset) and the rime includes the vowel (c-at the /at/ is the rime.
Phonics	The study of the relationship between letters and the sounds they represent. It is also used as a descriptor for code-based instruction in reading, e.g. “the phonics approach” or “phonic reading. (Moats, 2004 p.286)
Phoneme	The smallest units of sound that make up spoken language. Some phonemes are represented by more than one letter. (Sousa, 2005 p. 222)
Phonemic Awareness (knowledge)	Conscious awareness that spoken words are made up of individual speech sound (but not necessarily which sounds they are or what order they are in); it represents the pinnacle of phonological awareness development in that it deals with abstract, fleeting and tiny unit of perception in spoken words (Walsh 2009 p. 215)
Phonological Awareness (Knowledge)	Conscious awareness of the sound structure of spoken word, e.g. syllable beats, rhymes, onset-rimes, individual sounds etc. (Walsh 2009 p. 215)

Phonemic analysis and synthesis skills (skill)	Ability to blend or break up spoken words into component individual sounds; it develops from basic level skills of identifying one sound only (first or last sound in a word), then identifying all sounds within a word (segmentation and blending); a child develops more sophistication to a high level of sound analysis (e.g. elision: say 'stack' without /t/). Different word tasks have different cognitive or linguistic requirements. Highly sophisticated levels of phonemic skills can only develop in the context of print. Phonemic skills are the most sophisticated type of phonological skills (Walsh, 2009 p. 215).
Sight word reading	This way of reading words involves the use of memory to read words that have been read before. The reader looks at the word and the brain recognizes it. This is the most unobtrusive way to read words in text (Ehri & McCormick 1998; Ehri 2005)
Synthetic phonics	It starts by teaching children a small group of letter sounds rapidly. Children sound and blend words made up of the target letters to find out how to pronounce them. Then another letter sound is taught, and children sound and blend new word made up of the previously taught letters. This process continues until all of the letter sounds, digraphs etc. used in English have been taught. (Johnston & Watson 2009 p.100)
Vowel	A class of open speech sounds produced by the easy passage of air through relatively open vocal tract. English vowels include *a, e, i, o, u* and sometimes *y.* (Birsh, 1999, p.502)

Word recognition	The ability to identify the spoken word that a printed word represents; to name the word on the printed page. (Moats 2005, p.94)

Appendix 5: Cover Letter to Students and Teachers Who Completed Questionnaire #1 with Consent Form

Gordon Academic College, Haifa

Course: Teaching Reading in English to Pupils with Learning Disabilities.

Lecturer: Naomi Roffman

Dear student,

Thank you for signing up for my course 'Teaching Reading in English to Children with Dyslexic Characteristics or Children at Risk- The EMPI Programme'. I have a great deal I want to teach you and I am sure that you will benefit greatly from this course.

I am about working on my PhD degree and I need to collect information for research purposes. Attached is a Knowledge questionnaire that I would like you to fill in. Your responses are very important to me and will serve as the basis to my study.

You do not have to include your name or any personal details and anonymity will be respected at all times. The results will remain confidential and I promise to use them only within the framework of my study.

It is not compulsory to fill in the questionnaire and if you decide not to submit the form on completion I will respect your decision. Lack of submission will not penalize your final grade for this course in any way whatsoever.

Attached please find a Form of Consent which requires your signature.

Thank you for your co-operation.

Sincerely,

Naomi Roffman

Consent Form

Title: The impact of an explicit, multisensory, phonics intervention programme on the professional development of the English foreign language teacher.

I agree to take part in the PhD research project of Naomi Roffman. I have had the project explained to me, and I read the attached letter.

I agree to complete a questionnaire on Reading and Spelling terms.

I understand that my participation is voluntary and that I can withdraw at any stage of the project without being penalized or disadvantaged in any way

and/or

I understand that any data that the researcher extracts from the questionnaire for use in reports or published findings will not, under circumstances contain identifying characteristics or names

and /or

I understand that any information I provide is confidential and that no information that could lead to the identification of any individual will be disclosed in any reports on the project or to any other party.

and/or

I understand the data from the questionnaires will be kept in secure storage and accessible to the research team

Participants name:_____

Signature:

Date:

Appendix 6: Cover Letter to Teachers Who Had Participated in the EMPI Programme with Consent Form

8 Amnon & Tamar Street,
Ramat Almogi,
Haifa,
6 April 2007.

Dear teacher,

In the past you were one of the teachers who participated in my course "Teaching Reading in English to Children with Dyslexic Characteristics or Children at Risk - The EMPI Programme'. The course was originally given at the Bet Sefer Le'Ovdei Horaah and then in later years at Oranim or Gordon College.

At present I am doing my PhD. and I am interested to see if the course gave you tools to teach beginning reading and if it left an effect on your professional development. Over the years I have met up with some of you and you always have interesting remarks to make. There are difficulties in the field and I would like to know if the course helped you to cope better.

I know you are all very busy but I really need your cooperation.

I am enclosing a questionnaire. Please read through it carefully and answer my questions. Your opinions and remarks are very important and will help me very much.

I promise to keep the results confidential and use the information only for purposes of the research that I am carrying out. You have the right to remain anonymous and not to include your names or personal details.

When you have completed the questionnaire please return it to me by post. I have enclosed a self addressed envelope with a stamp so all you have to do is drop it in the nearest post box.

The course has taken place for seventeen years and it is because of each of you who chose to participate and learn about learning disabilities and reading. I would like to thank you. This course has changed my life and brought about my personal professional development. I could never have experienced this with out you.

Please take a few minutes to fill in the questionnaire.

If you prefer to fill it in online, please e-mail me and I will send it to you.

Thank you for your cooperation.

Yours sincerely,

Naomi Roffman.

Tel/ Fax: 04-8256180

e-mail: naomi-r@actcom.co.il

Consent Form

Title: The impact of an explicit, multisensory, phonics intervention programme on the professional development of the English foreign language teacher.

I agree to take part in the PhD research project of Naomi Roffman. I have had the project explained to me, and I read the attached letter.

I agree to complete a questionnaire on Professional Development.

I understand that my participation is voluntary and that I can withdraw at any stage of the project without being penalized or disadvantaged in any way

and/or

I understand that any data that the researcher extracts from the questionnaire for use in reports or published findings will not, under circumstances contain identifying characteristics or names

and /or

I understand that any information I provide is confidential and that no information that could lead to the identification of any individual will be disclosed in any reports on the project or to any other party.

and/or

I understand the data from the questionnaires will be kept in secure storage and accessible to the research team

Participants name:_____

Signature:

Date:

Appendix 7: Outline of the Course, Teaching Reading in English to Children with Dyslexic Characteristics or Children at Risk- The EMPI Programme

Gordon Academic College, Haifa
Dates of Course

2006-7

Course: Teaching Reading in English to Children with Dyslexic Characteristics or Children at Risk – The EMPI Programme

Lecturer: Naomi Roffman

Semester I

Number	Date	Content of Session
1.	1.11.06	General Introduction Barriers to learning
2.	8.11.06	What is dyslexia? Who is the Child with dyslexic characteristics?
3.	15.11.06	Brain Functions. How does it feel to have dyslexic characteristics?
4.	22.11.06	Learning and spoken language. How the brain reads. Four part processing system.
5.	29.11.06	What is multi-sensory teaching? What are learning styles?
6.	6.12.06	Important terms you need to know.
7.	13.12.06	Read articles together.
8.	20.12.06	Demonstration lesson
9.	27.12.06	The Ten Point Lesson Plan
10.	3.01.07	The Reading Pack
11.	10.01.07	The Spelling Pack
12.	17.01.07	The Word Pack
13.	24.01.07	Practical session making materials

*** End of Semester I. Submit portfolio with materials that have been prepared so far.

Semester II

Number	Date	Content of Session
1.	28.02.07	Sequencing
2.	7.03.07	Games- their place in the remedial lesson. Think of ideas and make them.
3.	14.03.07	Games
4.	21.03.07	Syllable Division.
5.	28.03.07	Ph words Phonological Awareness Adapt some ideas and prepare materials
6.	11.04.07	Phonemic awarenesss
7.	18.04.07	Demonstration lesson. Teach me.
8.	25.04.07	Practical session. Teach each other.
9.	2.05.07	Practical session. Teach each other.
10.	9.05.07	Practical session. Teach each other.
11.	16.05.07	Teaching vocabulary. Exchange ideas. Make them multi- sensory.
12.	30.05.07	The first lesson. How do we prepare and what do we teach?
13.	6.06.07	Handwriting.
14.	13.06.07	Case studies
15.	20.06.07	Tying up the threads

Appendix 8: The Ten Point Lesson Plan

The Ten Point Lesson Plan

Name of the pupil: Additional Aids:

Date of the lesson: Lesson number:

Aim: To reinforce:

To teach:

Sequencing/Alphabet Activity:

2. Reading cards.

3.Reinforcement Activity:

4. Phonological Awareness:

5. New Topic: Visual: Auditory Kinesthetic Tactile

6. Reading: Words/vocabulary

Story/sentences

Unseen/reading skills

7. Spelling Cards

8.Writing: Word pack

Dictation

Sight words

Creative writing

9. Review

10. Game:

For the teacher: Give your pupil a meta-cognitive tool.

Think about the following.

Problems found in the lesson:

Ideas for the next lesson;

Appendix 9: Intervention Programmes

Intervention programmes

Different intervention programmes have been used over the years to improve the academic gains of the students and to prevent the widening of the gap between struggling readers and their peers. Reading Recovery (Clay, 1985) is an example. For a description of other intervention programmes see details in the appendix.

Reading Recovery (Clay)

Reading Recovery is an internationally recognized early reading intervention programme for struggling readers pioneered by Clay (1985). It was originally taught in New Zealand but is also used in English speaking countries. The aim of the programme is to teach children who have failed to learn to read. They are encouraged to make use of available strategies and self monitoring so that they can become both independent and fluent readers. Studies show that at risk students manage to close the gap (Gomez-Bellenge, Rogers and Fullerton, 2004) and even children in the lowest reading group were reading as well as their peers three years later (Askew et al., 1998; Briggs and Young, 2003). The programme is considered successful and several studies have made systematic comparisons with other methods. Snowling (1996) discusses them. The expertise of highly trained teachers is an important component of the success of the programme (Pinnell, et al., 1994; Pressley, 1998).

RR in Britain

In Britain, the government has given £5 million towards a three year pilot of Every Child a Reader from 2005. This is a scheme which uses Reading Recovery together with other less intense programmes. The Institute of Education followed up the progress of the children participating in the programme. They found that the standard of reading of the children improved significantly. Jean Gross, the director of the Every Child a Reader programme says that what matters is that the children go back into effective literacy

teaching at a whole school level. In Britain, three out of four children manage to remain at the expected national levels five years on (Ward, 2008).

Kevin Wheldall, who is a literacy expert at Maquarie University Special Education Centre in Australia feels that struggling readers who have received phonics instruction will not succeed with Reading Recovery because they have severe phonological processing difficulties. Financial support for the programme is being withdrawn by the Australian government title.

In order to maximize the effectiveness and to make sure that early prevention and intervention efforts are effective, reading goals and performance indicators must be established for each grade. This procedure enables the teacher to decide when and how to schedule and sequence instruction. The children will be identified and individualized interventions can be provided.

Remedial programmes used in the United Kingdom for children with Reading Difficulties

Many different methods and approaches have been developed and used to teach children with dyslexic characteristics to read. They are usually based on a multi – sensory instruction which incorporates hearing, vision and kinesthesis. These methods are widely used, but " *few have been properly evaluated* " Snowling (2006, p. 178). She cautions for control of the Hawthorne Effect. The idea behind the Hawthorne Effect is that when people are given more attention they work better

The Hickey Multisensory Language Course (Augur & Briggs 1992)

The Hickey Multisensory Language course is a success orientated approach used by the Dyslexia institute. Its main objective is to remedy a variety of literacy disorders including reading, writing and spelling. The rationale is to provide a highly structured phonics approach and to teach systematically, comprehensively and cumulatively (Augur and Briggs, 1992). This programme has been updated and the third edition was published in 2001 and written by Margaret Combley.

Alpha to Omega programme. (Hornsby, Shear and Pool, 1999)

Alpha to Omega is a widely used programme. It provides the teacher with a very detailed language learning programme. The authors suggest that the teacher begins with consonants in the order of acquisition in spoken language. They show the interrelationships between vowels as well as how they are formed and articulated. The programme is described as being based upon a linguistic approach in relation to its syntactic expectations. Lists of words are provided and short sentences for reading and dictation are provided until all the mains sounds are covered.

Bangor Dyslexia Teaching System 3rd (Miles, 1997)

This is an example of systematic approach to the teaching of the written language system. It avoids rote learning tasks since LD children have a problem of "working memory" but they can progress in reading if concentrated teaching is provided and phonological awareness is stressed. Onset and Rime as well as syllabification of words are also taught.

The Response to Intervention model (Tier model)

"*A response to intervention (RTI) model proposes the identification of students with reading difficulties on the basis of a series of progressively more intensive instructional interventions over extended periods of time*." McEneaney, Lose and Schwartz, (2006, p. 117). Therefore, RTI is better than waiting for students to fail (Foorman and Torgesen, 2001; National Institute for Child Health and Human Development, 2003). Response to intervention (RTI) may hold promise for all children who are struggling to read (Vaughn and Fuchs, 2003) including English language learners (ELLs). The rationale is that prevention and early intervention will limit the number of young children entering special education frameworks.

The RTI (Response to Intervention) Model (A preventative model)

Current preventative models for reading propose multiple tiers for intervention. The intervention usually begins in regular education and ends in special education (Al Otaiba

and Fuchs, 2002; Denton and Mathes, 2003; Simmons, et al., 2003; Vaughn and Fuchs, 2003).

Denton, Fletcher, Anthony and Francis, (2006) describe the RTI model in the following way.

Tier 1 (core reading instruction)

Evidence based reading instruction is used in the regular classroom.

It enhances the level of instruction. Students are monitored especially those who are considered at risk. Results have shown that 6%-10% of the numbers of children at risk can be reduced (Mathes and Denton, 2002; Lyon, Fletcher, Fuchs and Chhabra, 2006).

Tier 2

Supplemental intervention is provided in addition to high quality classroom instruction. Instruction is usually given in smaller groups. Both McMaster, Fuchs, Fuchs and Compton, (2005) and Mathes, et al. (2005) found that 2%-5% would remain at risk for reading difficulties if high quality secondary interventions supplemented enhanced reading instruction in the first grade.

Tier 3

Even though tiers 1 and 2 of intervention have been found to be effective, there is still a small group of students who despite high quality intervention and supplemented enhanced reading instruction do not succeed in reading well and continue to struggle. They are sometimes referred to as "low responders" or " treatment resisters" (Wanzek and Vaughn 2008). They should receive intensive tertiary instruction in a small group or one – on – one over an extended period of time.

The RTI model is promoted as a prevention tactic. The aim is to address the student's difficulties in the early grades before the problems are entrenched. This will alleviate the need for far more expensive intervention (Fuchs and Fuchs, 2006). Findings of the studies carried out by Kamps, et al. (2008) and Kamps and Greenwood (2005) showed

that schools were able to manage intervention for students in the early grades before they became too severe and were left behind by their peers. This is concurrent with the results of other researchers (Kamen'enui, Simmons and Chard, 2002; Vaughn and Fuchs 2003; Linan-Thompson, Vaughn, Prater, and Cirino, 2006) who also found that the implementation of intervention as early as possible for students at risk for reading failure is dependent on the success of the three tiered model. A similar model described by Louden, et al. (2000) is used in Australia.

Simos, et al. (2002) carried out a study to identify brain activation patterns. The scans taken after intervention showed the patterns had changed and that they had become like those of regular readers.

'Waves' of teaching in Britain (Ofsted 2009)

The National Strategies Intervention programme targeted pupils who were not attaining the expected level in certain subjects include but had the potential. Although the intention was not to focus on learning disabled children or under achievers some of them were included in the target group. Early identification of pupils is recommended and a variety of approaches and programmes are used. The National Strategy describes three 'Waves' of teaching and support (Ofsted 2009, reference 070256 p.7).

Wave 1: high quality, inclusive teaching supported by whole-school policies and frameworks that are clearly targeted at all pupils needs and prior learning.

Wave 2: additional, time-limited intervention programmes designed to accelerate learning for particular groups that are expected to catch up or exceed the performance of their peers as a result.

Wave 3: targeted, time-limited, evidence based and increasingly individualized programmes of intervention.

Intervention programmes using a variety of methods but teaching individuals or small groups succeeded in reducing the number of struggling readers (O'Connor 2000; Torgensen, et al. 2001; Simmons, et al. 2003). Reading intervention programmes may

help the at risk readers to consolidate basic reading skills but they are still in need of help in the area of higher order thinking skills so that they can cope with informative texts (Pressley 1998, 2000; Hiebert and Taylor 2000). Allington (2002) recommends that schools engage in long term planning of effective intervention programmes.

Appendix 10: Table 1

Table 1

Paired Differences in Knowledge between the Content Areas, by time (N=256)

	Pre-test (N=141)						Post-test (N=115)					
	2.	3.	4.	5.	6.	7.	2.	3.	4.	5.	6.	7.
1.Concepts of phonics	***	***		***	***	**	***	***	***	***	***	
2.Knowledge of vowels	1	***	***	*	***	***	1		***	*	***	***
3.Differentiation between syllables		1	***	*	***			1	***	**	***	***
4.Phoneme count			1	***	***	**			1	***	***	***
5.Syllable count				1	***	***				1	***	*
6.Spelling rules					1	***					1	***
7.Terminology						1						1