Spaces of Transformation: the Experience of Architecture Students

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Abstract

This paper comments on the experiences of a group of architecture students — from the University of Idaho, USA, and from Anglia Ruskin University, UK — who attended a week-long workshop at the Centre for Alternative Technology in Wales, UK. We examine, through student reflection, the transformations experienced and how the collaboration and location has influenced their work and reinterpretation of their lifeworld.

Spaces of Transformation: the Experience of Architecture Students

We identify ourselves with this space, this place, this moment, and these dimensions become ingredients of our very existence. Architecture is the art of reconciliation between ourselves and the world, and this mediation takes place through the senses. (Pallasmaa, 2005, p. 72)

Introduction

The consequences of the way we live and build have been well documented (Day, 2004; Meadows et al., 2004; Stocker et al., 2014). With a predicted 70% increase in the global construction industry by 2025 (Betts et al., 2013), there can be little doubt that anthropocentric pressures on our environment will not only continue, but will intensify. We cannot blithely continue to construct as we have in the past with profligate use of planetary resources. (Meadows et al., 2004). Exposing architecture students to opportunities to become more environmentally conscientious can provide them with the desire and the tools to transform the industry, ameliorate adverse affliction on the environment, and create and provide nurturing spaces for our future.

Established in 1973 and located in a disused slate quarry three miles from the nearest town, the Centre for Alternative Technology (CAT) is an education and visitor centre demonstrating practical solutions for sustainable living. The campus is designed to be used as an educational tool for all ages, the Wales Institute for Sustainable Education (WISE) building in particular 'conveys a subliminal message […]. It says a sustainable future can be beautiful and comfortable' (Clarke, 2013, p. 196), echoing the architect's feelings that:

> *architecture touches the heart through the relationship of interior space to nature, to view, sunlight, moonlight, wind, water and birdsong [...] rather than expressing personal reactions to apparently overwhelming economic forces. (Lea, 2006)*[1]

The collaboration between CAT and the University of Idaho (UI) started in 2009 with a week-long workshop for postgraduate students. This collaboration takes place biennially, and in 2013 undergraduate architecture students from Anglia Ruskin University (ARU) participated for the first time. The 2013 workshop was comprised of 8 students from ARU and 16 from UI, working alongside 24 postgraduate students from CAT. For UI students their week at CAT formed part of a month-long study trip on green architecture in the UK. The experiences of the CAT students are not included in this paper as they were at their usual place of study.

The UI students were required to complete a reflective journal throughout their trip, whilst the ARU students presented their experiences to peers in Fall 2013. Journals are one way to encourage critical reflection, but some students are more at ease talking about their experiences than writing about them (Taylor, 2008), so students from all three institutions engaged in group presentations on the last day of the CAT workshop.

Ten months after the trip two ARU students (Adelina and Lewis) and two UI students (Meghan and Skye) were invited to reflect on their experiences through semi-structured interviews. The interview transcripts were analysed in conjunction with the reflective journals and the student presentations. The study tour has long been a feature of architectural education, and whilst travel has been found to be transformative given certain circumstances (Morgan, 2010) research into study tour benefits has been inconclusive (Stone and Petrick, 2013). This paper aims to contribute to those debates.

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[1]David Lea is one of the architects of the Wales Institute for Sustainable Education (WISE) building, the award-winning faculty building at the Centre for Alternative Technology (CAT).

Experiences

The week at CAT began Tuesday with arrival and dinner; teaching commenced Wednesday morning with tutors outlining their approach to the week's work. Each workshop focused on a specific theme: daylighting, emergency shelters, acoustics, solar hot water, solar test cells, and water purification. Students chose from the six workshops, declaring their preference in descending order. They were allocated their first choice as far as possible. Students' determination of their course of study for the week may have influenced how they felt about the week in general; how much attaining their top workshop preference contributed to their attitudes was not specifically queried during the interviews.

Immersion

The pedagogical underpinning for both UI and ARU students was broadly to 'introduce alternative ways of living/working and introduce a holistic concept of sustainability' (Lange, 2004, p. 125); immersion at CAT was crucial to that goal. During their week in Wales students lived, ate, and worked together in the faculty buildings or the wider campus gardens, sometimes in the barn next to the chickens and goats. At night both groups stayed in the eco-cabins, off-grid bunk houses with wood-burning stoves, solar power, and a limited water supply from a nearby reservoir.

> *staying in the eco-cabins, you learn a lot just by engaging with the architecture [...] it's there, it's in your face, it's living with sustainable design [...] teaching people through it (Lewis)*

As Lange (2009) highlights there is value in creating space where students are able to be immersed in alternatives, allowing new ways of being and thinking whilst questioning broader realities. Students found the atmosphere compelling. The energy and determination of others inspired them to work and 'come up with ideas' (Adelina), particularly as the conversations were always 'moving around architecture and sustainability' (Adelina).

This immersion in an enthusiastic community, living the theory, was as important as learning from others' passion and commitment; peer relationships facilitated open debate and enhanced that learning (Lange, 2004, p. 125):

> *everyone there was passionate about what they were doing [...] you're immersed in the experience rather than just going and connecting to it once a week (Lewis)*

The significance of the immersion both within the site and in the community was commented on several times during the interviews. This holistic approach was seen as beneficial, significant, and different:

> *It's a whole approach to learning and living that benefits the teaching process and the learning process that the students receive (Meghan)*

Community

The week at CAT generated a sense of cooperation and community. Although apprehensive at first, undergraduate students became more confident as the more experienced students guided them. The groups coalesced quickly as 'it was really easy to get involved' (Adelina). This camaraderie resulted from everyone's (students and faculty) determination to learn coupled with a commitment to total involvement 'where nobody is slacking, nobody is sitting aside, everybody is together and talking, and "architecting"' (Adelina). Community was manifest in the final group presentations that demonstrated the benefits of the cooperative experience, as all students participated equally, and reinforced the importance of social interaction in learning (Illeris, 2007).

Apart from learning together, a sense of community was generated through eating together three times a day. Discussing that day's work over dinner or the work ahead over breakfast created opportunities to reflect and share experiences.

> *I really liked all the group time we had […] living in close quarters with all the other people. There was a much more community feel […] we would separate, then there were times when you could just relax, join the group to talk about your day, and there was much more community then (Skye)*

The regime of breakfast at 8:30am, coffee at 11am, lunch at 1pm, tea at 4pm, and dinner at 6pm met more than the students' nutritional needs: everyone took advantage of opportunities for discussion and debate, a routine 'rooted in a particular environment' (Seamon, 2014, p. 13). Seamon goes on to argue that attachment to place through routine strengthens that attachment. The students developed and retained attachments to the physical space as well as to the community they formed and to which they remain connected through social media. It was good working with 'people I didn't know before; and I'm staying in touch with some of them' (Meghan).

Beyond the physical space and routine lies the psychological space—the place at the edge of teaching, the intellectual and ethical space of the whole community. Enthusiasm, commitment, and shared values form an environment rich with a sense of community where trusting and committed peer relationships were developed (Lange, 2004, p. 125). The community that is formed is in sharp contrast to the often competitive nature of architecture school.

> *you learn more from the people you're surrounded by than the teaching itself […] you're part of a small community. You're not on a vast campus with a section of it devoted to your area of interest. The whole event, the whole thing is about what they're trying to pass on […] through teaching (Lewis)*

Hands-on

Experiential learning is rooted in the work of Dewey ([1938] 1997) and galvanised in Kolb's learning cycle (1993) where emphasis is placed on experimentation, reflection, and action in a cyclical, iterative process, a process familiar to those engaged in design teaching. The pedagogy at CAT encapsulates testing, theorising, and re-testing. One student commented that the week consisted of 'experimentation, not just reading a book' (Lewis), another stated 'it was less research, theory, and reading, and more experimental research or experimental action' (Skye) —both these students clearly capturing the praxis. The learning was student-centred, student-controlled, with a correspondence between the learning environment and the 'real' environment, encompassing key elements that Illeris (2007, p. 86) identifies as constituting experiential learning. The challenges faced by the students reflected the 'real' life of commissioned architects, engineers, or even a family building an emergency shelter:

> *my project got almost real really fast. We had to salvage our materials, and some of the other groups were much better at it than my group, so we had little wars trying to get these materials […] it was almost very indicative of an actual situation (Skye)*

Simultaneously students were experiencing an academic challenge through intensive workshops—building, making, and inventing solutions using real-world scenarios (Illeris, 2007) — as well as challenges to their taken-for-granted lives. Having examples of sustainability all around, being in those spaces, and seeing the work of others — all contributed to the experiences of the week. In one student's words:

you're actually learning about sustainability and you have a good example in front you, you're sitting in it and all around you there are examples of sustainability, and the best way to learn is from practice, you know from actual seeing and experiencing (Adelina).

Reflections

The relationship between critical reflection and transformation is well established (Cranton, 2006; Mezirow, 1990). Exposing students to material, social, and cultural difference challenges them to face physical, psychological, and ecological space in how they best address the needs of the planet as a whole (O'Sullivan, 2008). Encouraging students to reflect on the environment can be key in developing a holistic, ecological awareness (Jones, Pooley, and Tinning, 2012) that is vital for the preservation of our future. This systemic transformation, within professions, industries, and communities, will only occur through individuals collectively living reflective, examined lives (Walker, 2014, p. 105; Meadows et al., 2004, p. 280).

Project work

Architects can make a significant contribution to the creation of community space: physically through construction and psychologically through theory and debate. Architects need to address the physical influence of a building on the environment in addition to the psychological nature of building, how the building is experienced (Fox, 2009, p. 388).

All students interviewed reported the week at CAT affected their university projects in 2014, manifested in different ways, from direct application of new knowledge in acoustics and daylight to addressing social issues of economic regeneration and housing standards, to environmental issues of low-impact building and renewable technologies.

Being at CAT made [thinking sustainably] a way of doing things rather than something to add on at the end. That's the most important thing I gained (Lewis)

it has influenced my [...] thinking more about sustainable living and how I can encourage sustainability through the design of my buildings (Meghan)

I used the CAT experience and knowledge in the layout of my auditorium; so yes it did help, it did influence my course (Adelina)

Day-to-day

Students experienced being outside their own cultural, ecological, psychological, and spiritual space (Morgan, 2010). CAT tested students' taken-for-granted lifestyles particularly when it came to food, toilets, and showers. Students faced and embraced those challenges, sometimes resulting in a lasting legacy. One student became vegetarian, and one misses the daily reminders about life-style choices.

They actually practice the theory of consuming low-energy [...] food. that was really inspiring for me, once I got home I actually started practising that kind of diet myself (Adelina)

even just my everyday living choices —what kind of [...] toilet is in my apartment or how often I flush it every day—at CAT there are informational posters everywhere around the apartments that I read every day (Meghan)

This same student enjoyed using the composting toilets at CAT and commented on how choices were daily evident, knowing the source of your energy, how much you were using, how you were living — living and learning as a single experience rather than separate ones.

I really enjoyed the lifestyle of CAT. I enjoyed living in the eco-cabin and using the composting toilet and all the components that came with it that I wouldn't usually experience here (Meghan)

Future directions

The interviews, presentations, and reflective journals provided the students with a framework for communicating their experiences that in turn helped them refine and re-define their values (Wenger, Trayner, and de Laat, 2011, p. 34). Since the workshop at CAT several students from both cohorts have changed their approach to architectural work, being more mindful and authentic to their environmental ethics rather than merely addressing a need for green architecture. They experienced and describe a deeper transformation (Dirkx, 2006).

> *it's become more ingrained in me […] CAT made it more real because I was immersed in it—it's more just what I'm doing (Lewis)*

All four students interviewed identified a future path that has been influenced by CAT: two of them have taken additional courses with a similar holistic approach to design; one student is now viewed by peers as the 'expert'. The learning has become part of who they are, perhaps as a consequence of being engaged with a critically relevant issue we all are facing. In trying to transform the world, we transform ourselves (Schapiro, 2009, p. 103).

Summary

We wanted to capture the experiences of our students, generate debate about collaborative teaching, and explore the value of taking students outside their usual learning environment while exposing them to different ways of living and knowing. Escaping the city, reconnecting with the environment, and being immersed in a learning community touched them all in many different ways: home sickness, revelation, realisation, or reinforcing already held beliefs. Transformative learning theory offers an understanding of how this deeper shift in values can occur (Dirkx, 2006).

O'Sullivan (2008) notes the great despair caused by ecological damage, war, and violence and offers transformative learning as a way of generating hope. Orr (2004) posits education is at the root of building towards a hope-filled sustainable society. Providing opportunities for transformation for those who will create physical spaces in the future can also generate hope — creating an architectural commons, alternative spaces, and alternative models of our communities and our world (Haiven, 2014). For this transformation to happen, 'space' needs to be made within the curriculum to allow educators to embrace those opportunities by adopting a more holistic understanding, recognising the value of tacit knowing, and removing the obstacles to change often found in academia (Walker, 2014).

Where, if at all, the boundaries among place, reflection, travel, and transformation lie requires further research and a longitudinal study with the students who participated in this paper. We leave final comments to those students:

> *I didn't expect to engage with it like I did. I was never sceptical about sustainable architecture nor anything like that. I always thought it's what we should be doing, but finding a group of people so passionate about it was inspiring. (Lewis)*

> *I just really appreciated the opportunity to be there, to collaborate with the different groups of people from CAT and from Anglia Ruskin. (Meghan)*

> *CAT reinforced my way of thinking. (Skye)*

> *Working with people from everywhere, with different experiences, different backgrounds, and different universities or courses was a unique experience. (Adelina)*

References

Betts, M., Robinson, G., Burton, C., Leonard, J., & Shards, A. (2013). *Global construction 2025 executive summary.* London: Oxford Economics & Global Construction Perspectives.

Clarke, J. L. (2013). *To what extent do sustainable buildings encourage sustainable behaviour through their design, construction, operation and use?* Ph.D. diss., Kingston University, London.

Cranton, P. (2006). *Understanding and promoting transformative learning: A guide for educators of adults*. San Francisco: Jossey-Bass Publishers.

Day, C. (2004). *Places of the soul: Architecture and environmental design as a healing art* (2nd ed.). Oxford: Architectural Press.

Dewey, J. ([1938] 1997). *Experience and education*. New York: Touchstone.

Dirkx, J. M. (2006). Engaging emotions in adult learning: A Jungian perspective on emotion and transformative learning. *New Directions for Adult and Continuing Education, 2006*(109), 15-26. Retrieved from http://dx.doi.org/10.1002/ace.204 doi:10.1002/ace.204

Fox, W. (2009). Architecture ethics. In J.-K. B. Olsen, S. A. Pedersen, & V. F. Hendricks (Eds.), *A companion to the philosophy of technology,* 387-391. Chichester: Wiley-Blackwell.

Haiven, M. (2014). Crises of imagination, crises of power. *Roarmag*. Retrieved from Roarmag.org website: http://roarmag.org/2014/01/max-haiven-crises-of-imagination/

Illeris, K. (2007). What do we actually mean by experiential learning? *Human Resource Development Review, 6*(1), 84-95. Retrieved from http://hrd.sagepub.com/content/6/1/84.abstract doi:10.1177/1534484306296828

Jones, P., Pooley, A., & Tinning, B. (2012). Ecology, critical reflection and the praxis of change. Paper presented at A Future for Earth: Re-imagining Learning for a Transforming World:

Proceedings of the 10th International Transformative Learning Conference, San Francisco. http://meridianuniversity.edu/images/tlc_proceedings.pdf

Kolb, D. A. (1993). The process of experiential learning. In M. Thorpe, R. J. Edwards, & A. Hanson (Eds.), *Culture and processes of adult learning: A reader,* 138-156. London: Routledge in association with the Open University.

Lange, E. A. (2004). Transformative and restorative learning: A vital dialectic for sustainable societies. *Adult Education Quarterly, 54*(2), 121.

———. (2009). Fostering a learning sanctuary for transformation in sustainability education. In E. W. Taylor, & J. Mezirow (Eds.), *Transformative learning in practice: Insights from community, workplace, and higher education*. Retrieved from https://www.dawsonera.com/readonline/9780470605431/startPage/227

Lea, D. (2006). [Thoughts on a new course in architecture].

Meadows, D. H., Randers, J., Meadows, D. L., & Meadows, .D. H. B. (2004). *Limits to growth: the 30-year update* ([3rd rev., expanded and updated ed.] / Donella Meadows, Jorgen Randers and Dennis Meadows. ed.). London: Earthscan.

Mezirow, J. (1990). *Fostering critical reflection in adulthood: A guide to transformative and emancipatory learning*. San Francisco: Jossey-Bass Publishers.

Morgan, A. D. (2010). Journeys into transformation: travel to an "other" place as a vehicle for transformative learning. *Journal of Transformative Education, 8*(4), 246-268. Retrieved from http://jtd.sagepub.com/content/8/4/246.abstract doi:10.1177/1541344611421491

O'Sullivan, E. (2008). Finding our way in the great work. *Journal of Transformative Education, 6*(1), 27-32. Retrieved from http://jtd.sagepub.com/content/6/1/27.abstract doi:10.1177/1541344608316960

Orr, D. W. (2004). *Earth in mind: On education, environment, and the human prospect* (10th anniversary ed.). Washington, DC: Island Press.

Pallasmaa, J. (2005). *The eyes of the skin: Architecture and the senses*. Chichester: Wiley-Academy.

Schapiro, S. A. (2009). A crucible for transformation: The alchemy of student-centered education for adults at midlife. In B. Fisher-Yoshida, K. D. Geller, & S. A. Schapiro (Eds.), *Innovations in transformative learning: Space, culture, & the arts,* xii. New York: Peter Lang.

Seamon, D. (2014). Place attachment and phenomenology: The synergistic dynamism of place. In L. Manzo & P. Devine-Wright (Eds.), *Place attachment: Advances in theory, methods, and applications,* 11-22. Oxford: Routledge.

Stocker, T. F., Qin, D., Plattner, G.-K., Tignor, M. M. B., Allen, S. K., Boschung, J., Nauels, A., Xia, Y., Bex, V. & Modgley, P. M. (Eds.). (2014). *Climate change 2013 the physical science basis: Working group I contribution to the fifth assessment report of the Intergovernmental Panel on Climate Change* (1535). Cambridge and New York: Cambridge University Press.

Stone, M. J., & Petrick, J. F. (2013). The educational benefits of travel experiences: A literature review. *Journal of Travel Research*, 52(6), 731-744. Retrieved from http://jtr.sagepub.com/citmgr?gca=spjtr;52/6/731 doi:10.1177/0047287513500588

Taylor, E. W. (2008). Transformative learning theory. *New Directions for Adult and Continuing Education, 2008*(119), 5-15. Retrieved from http://dx.doi.org/10.1002/ace.301 doi:10.1002/ace.301

Walker, S. (2014). *Designing sustainability: Making radical changes in a material world*. Oxford: Routledge.

Wenger, E., Trayner, B., & de Laat, M. (2011). Promoting and assessing value creation in communities and networks: A conceptual framework. Open Universiteit Nederland: Ruud de Moor Centrum.