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Challenges of Motivating Postgraduate Built Environment Online Teaching and Learning Practice Workgroups to Adopt Innovation.

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Successful implementation of teaching and learning (T&L) innovation within an e-learning context in higher education institutions involves overcoming challenges. A key component of success in this regard is the level of motivation of those tasked with addressing challenges. This research project sought to identify the extent to which the level of support (motivation to adopt) for e-learning innovation implementation varied between individuals and over time. The level of support evidenced by individual lecturers (functioning as members of a workgroup) was assessed throughout a pilot study and a subsequent roll-out project implementing specific best practice T&L innovations. The methodology applied was determined on the basis of relevance to the focus of the project and the need for pragmatism within the constraints applicable. Nonetheless, the findings are in line with expectations established within relevant literature and are the basis of recommended actions to be considered by those undertaking e-learning innovation implementation projects. While the research is primarily focused on improving the motivation of lecturers exhibiting antagonistic behaviours, there is also consideration of the need to gain student support for any proposed T&L innovations. The identification of best practice T&L innovations is not an objective of the paper.

Keywords: Challenges, e-learning, Innovation, Motivation, Psychological Contract.

Introduction

Postgraduate education has, until relatively recently, changed little in terms of the pedagogic model in that, for the majority of practitioners (as opposed to theorisers), the model was more akin to teaching than pedagogy (Green, Lee, 1995). Arguably, this was in large part due to a lack of any perceived need to change that model, or indeed to give the model any significant consideration in terms of changing or developing pedagogy, as noted by Lusted (1986): "Within education and even among teachers, where the term should have more purchase, pedagogy is under-defined, often referring to no more than a teaching style, a matter of personality and temperament, the mechanics of securing classroom control to encourage learning, a cosmetic bandage on the hard body of classroom contact."

Indeed, most higher education providers considered there to be a consensus amongst potential students regarding the value of 'tradition' which actually worked against any argument for change. Nonetheless, the market changed during the relatively short period between the research by Lusted (1986) and that by Tomlinson (2008), who noted that: "… students perceive their academic qualifications as having a declining role in shaping their employment outcomes in what is perceived to be a congested and competitive graduate labour market. While academic credentials are still seen as a significant dimension of their

employability, students increasingly see the need to add value to them in order to gain an advantage in the labour market."

The market will undoubtedly undergo further change as the needs and requirements of postgraduate education providers' customers evolve in response to factors such as:

- Changing technological opportunities for the delivery of material (content);
- Increasing pressure on time that results in potential students requiring a more flexible approach to delivery;
- Financial constraints that reduce the ability of students to study both full-time and in a geographically fixed location,
- A more sophisticated perception of the extent of 'education' that they require for personal and/or career development.

The problem therefore is essentially one of how can postgraduate education providers meet all such needs and requirements through the adoption of efficient and effective teaching and learning (T&L) practice in an online environment. This problem is exacerbated by issues such as practitioners and researchers having differing perceptions of the key learning environment labels of distance learning, e-learning, and online learning (Moore et al, 2011). Whilst this issue can, at least in part, be justified through the existence of differing environments possessing different characteristics, it adds uncertainty for those new to 'virtual' teaching and learning. This may have been a factor in the decision by early online providers to resort to an approach involving taking all of the existing content and simply placing it online in the manner of traditional (over 100 years of practice) correspondence courses (Milheim, 2012). An understandable but naïve response which failed to understand that online teaching and learning practice should not simply aim to replicate face-to-face (F2F) teaching and learning practice.

While research is providing greater insights into factors affecting online students' satisfaction (Beqiri et al, 2009), it seems that difficulty understanding both the customers' needs and requirements, and how to respond to them with a model of practice that adds to the learning experience, remains a factor. Achieving the delivery of an appropriate model of practice is further hampered by varying levels of willingness (motivation) and/or ability amongst the content providers / subject matter experts (traditionally lecturers) to adopt innovation. The focus of the research presented here is solely on the challenges of motivating members of subject matter expert (SME) workgroups characterised by differing levels of skill maturity and behaviours (antagonistic or synergistic) to adopt innovative practices.

The research approach taken by the authors was one of a qualitative analysis of a pilot project. This was designed to represent an innovation adoption challenge in the context of a built environment postgraduate course delivered by a workgroup of differing skill-maturity levels. The term 'workgroup' is applied so as to reflect the relative lack of synergistic behaviours that would typically indicate a 'team'. Also, 'skill' refers to both subject area skill and online practice skill; a low level of maturity in one cannot automatically evidence a low level in the other. In addition, the subsequent roll-out of modules reconstituted in line with the pilot study findings was also part of the research project in that behaviours (indicative of motivation level) continued to be assessed throughout its duration. The pilot study component of the project required the production (consistent module templates, content structure, uniform assessment strategies, etc.) and delivery of content in line with current best

practice guidance (so as to ensure the outcomes of the pilot study were valid). The detail of these changes is not a focus of this paper.

Both production and delivery represented a significant departure from the workgroup's established practice. Throughout the pilot study and subsequent roll-out, the engagement of individual staff was assessed by using interviews, noting attendance at bespoke workshops and training events, and observing their behaviours. Also, feedback on the perceived effectiveness of the innovations was collected from students throughout both phases so as to provide 'evidence' to staff of the impact of the innovations.

Aim

Motivating lecturers to evolve their teaching practice beyond actions such as simply placing their existing (F2F) material online was identified as key in creating a best practice online teaching and learning environment. Early experience and evaluation by the School of this approach by lecturers clearly evidenced that the majority of students did not regard it positively, hence the drive to adopt a more innovative approach. The range of challenges reported here evidence that the problem of achieving effective and efficient e-learning environments is not one that can be solved through simplistic actions. In particular, the assumption that lecturers, especially those with considerable experience and stature in their subject, will more readily accept a case for change if it is robustly evidence-based proved to be a simplification of reality.

While the focus of the research carried out was very much on postgraduate built environment teaching within a British university, the nature of the customer base for such provision is demonstrably global. The pilot study involved modules delivered to students working in seventeen different countries, whilst the subsequent roll-out involved students from twentyfour different countries, thereby representing a range of cultural expectations regarding 'good' teaching and learning practice. The aim (stated below) of this project is essentially a representation of the challenges involved in motivating staff to effectively participate in the creation of what may be referred to as the 'classroom-at-large'. As traditional geographically-specific and physical 'as-built' constraints of classroom-delivered practice increasingly cease to be relevant, the emphasis shifts from the physical to the virtual, and the scale increases from the hundreds to the tens (or more) of thousands of learners.

While the opportunities resulting from both the removal of physical constraints (the infrastructure of the physical classroom) and the scaling-up of provision are undoubtedly tempting for many higher education institutions, there are also challenges for both institutions and individuals. The aim of the research project was to evaluate the responses of members of a workgroup composed of individuals of differing skill-maturity levels to the adoption and implementation of significant online T&L innovations. In order to achieve this, two objectives were identified:

- To produce a review of key technical and motivational challenges (as identified within the literature) in the context of preparing best practice content and a delivery environment/culture for teaching and learning innovation at postgraduate level within a built environment programme.
- To produce innovative teaching and learning material and a related delivery environment that addressed the identified challenges. This material was then to be the basis of a pilot

study and subsequent roll-out project designed to evaluate the responses of staff and students to significant e-learning innovation.

With regard to the first objective it is worth noting that the majority of the literature was found to be focused on the technical challenges of innovation, with relatively little consideration of the motivational challenges. The literature that focused on the technical challenges mostly suggested an assumption that successful implementation of innovation was almost entirely dependent upon selecting the 'best' technology. However, in both phases of this project there was relatively little change with regard to the technology used as the focus was on practice rather than technology.

An experience-based vignette is provided to illustrate the emergence of stated research findings during both phases of the research project. These findings, however, should not be regarded as relevant only to the context of the pilot study and roll-out. E-learning is increasingly becoming a global product, the supporting technology for which is constantly developing new opportunities. Making successful use of such opportunities is ever more dependent upon learning from the successes and failures of others. In addition, the relevance of the findings presented here merits consideration in the wider context (beyond postgraduate built environment teaching and learning) of social and economic development globally. It has, for example, been stated that Africa has an infrastructure (including ICT) 'shortfall' of US$93bn per year with the economic impact of this being a 2% p.a. reduction in growth and up to 40% less productivity (Deloitte, 2013). Decisions concerning the best return on African infrastructure investment have placed emphasis on the creation of several ICT 'backbone' initiatives, of which the Central African backbone (ADBG, nd) is one example, which aim to plug key African broadband access gaps. Whilst the immediate economic return on such investment is appreciated, it is also claimed that such projects facilitate the development of education provision (at all levels) such as is evidenced by the African Development Bank Group's support of the African Virtual University (AVU) project (ADBG, 2013). Whilst addressing the quantity of infrastructure for online teaching and learning is essentially a challenge of finding the required funding to deliver relevant technologies and capacity, the challenge of achieving innovative online T&L environments is somewhat more complex.

Challenges-at-Large

There are impediments to the adoption of innovative practice in any institution, for which a number of strategic and tactical responses are available. At the strategic level, adoption can be supported through the development of a Learning Organisation for the institution (typically but not exclusively a university) as a whole, including the development of a shared vision, a sense of mastery, and an awareness of the broad issues (Senge, 2006). However, whilst the structure of a learning organisation can be implemented at school, faculty or institution level, it is important to acknowledge that, for T&L practice, successful adoption is about more than the imposition of structure; innovation has to be accepted and delivered by individuals who approach the prospect of innovation from both a logical and an emotional point of view (Webster, 2012). The emotional aspect of the problem should not be underestimated or trivialised (both mistakes tend to be made by managers who are naïve with respect to the differences between F2F and e-learning environments). Lecturers value, and see as a key part of their role and self-identity, the tradition of being at the centre of the delivery of learning in a manner that can be traced back to the Renaissance. In short, there can be a very strong emotional attachment to 'traditional' T&L practice, as was found with

initial attempts to change established practice within the workgroup at the focus of this research project.

In terms of emotional attachment as evidenced by motivation levels, only around 20% of the workgroup were initially (pre-pilot study) enthusiastic about increased online activity primarily as a response to two factors:

- Decreasing recruitment of on-campus students.
- An awareness of an increasing online market.

50% of workgroup members were assessed as being essentially neutral to the proposal, and 30% were assessed as resistant. At this early stage (3 years prior to this research project being initiated), the workgroup members expressed concern regarding several perceived barriers; members rarely expressed an outright refusal but the majority effectively presented reasons why any innovation proposal would not succeed. Typically these reasons related to workload, both with regard to producing online T&L material and the perceived need to respond to students' questions etc. outwith the usual period devoted to lectures. However, several of the reasons could also be interpreted as evidencing an unwillingness to engage with the perceived move away from lecturers being at the centre of the delivery (the so-called 'sage on the stage' position). Management responded to these concerns by scaling-back the extent of innovation within the initial proposal. The result being that only 3 members of the workgroup became regularly involved as part of the community of practice within the university's online environment. Unfortunately, the expertise accumulated by these members was variable due to their differing levels of engagement with the requirements of the university's (at the time) rather basic online environment. This variability reduced the extent to which these members could collectively lead or drive any future innovations to online T&L practice, such as the university's implementation of a learning expectations project across all online postgraduate courses. The repetition of the earlier concerns by some members of the workgroup, when it was perceived by them that this 'expectations' project would require them to consistently engage with the online T&L environment, acted as the key trigger for the research project presented here.

A secondary trigger was the decision to add to the workgroup by the recruitment of an individual having expertise in formatting/structuring online material and working with online students in a support capacity. While this role was clearly stated as being a non-lecturing role (effectively a combination of the instructional designer and T&L SME roles), the appointment resulted in anxiety amongst some members of the workgroup when they perceived the innovations (in line with best practice) proposed by the appointee as not representing 'good teaching'. Considerable effort (workshops and presentations supported by research evidencing the wider acceptance of similar proposals as being in line with best practice) was expended, with only limited success in overcoming such perceptions being achieved. What then is the best method to motivate SMEs who may perceive innovation as being an attack on their established (and therefore good) practice (Lane, 2007), and are unwilling to implement the positive logical and emotional perspective required to adopt that innovation? In this case it was decided that the most effective approach would be to prove the proposals through the implementation of a pilot project (see *Appendix*).

Along with resistance flowing from the emotional attachment to tradition, a similar response typically results when innovation is perceived as being undertaken for no other reason than to be innovative, and also when the meaning of the term is misunderstood (Luit-Drummond,

2015). Thus there are three challenges that, to varying extents, will exist in any teaching institution;

- The emotional attachment to tradition (of whatever form).
- The perception of innovation as being purely for its own sake (and therefore a waste of resource and can be ignored).
- The misunderstanding (wilful or otherwise) of what innovation actually involves.

Of these three, the emotional attachment to tradition (particularly regarding the perceived sapiential authority of the lecturer) was found, within this research, to be the most difficult challenge to overcome. Given the presence, to varying extents, of these challenges in all teaching and learning institutions they can be regarded as challenges-at-large.

Challenges for SMEs

Following the presentation of a rational case for specific innovation there must be enough time allocated for SMEs to become confident with new practices and skills (Lane, 2007), including the use of innovative T&L technology. When e-learning becomes part of the pedagogical delivery, different (to the traditional F2F model) teaching tactics are required so as to maintain student engagement (Moore, 2012). A further aspect of SME willingness to adopt innovation is the level to which it is believed that students will respond positively to this. Significantly different (to the traditional approach) approaches to pedagogy can cause anxiety in students (Huba, 2000), and a negative response from students can then discourage SMEs from continuing with innovation, thereby reinforcing the perception that traditional lecture methods must be maintained (Knapper, 2008). Such a response is congruent with the recognised psychological preference for certainty (what is already 'known' to work) and the avoidance of uncertainty (what is not 'known' to work) by the majority of people, particularly amongst groups having an 'aging' profile (Mather et al, 2012).

The age-related tendency to avoid uncertainty may have been a factor in the overall dynamic of the workgroup at the focus of this research. The project workgroup's profile comprised 20% in the 40-50 age group, 70% in the 50-60 group, and 10% in the 60+ group. Such a profile could be expected to result in a greater emphasis on avoiding uncertainty than on embracing innovation. It is not, however, suggested that this profile is typical, particularly in the UK where profiles may be being reversed by an increasing focus on recruiting staff from a research rather than practice or industry background. However, the global trend appears to be toward an aging profile.

Further challenges to e-learning innovation adoption also include a poor understanding of the roles needed to deliver and support online learning; the (traditional) perceived need for the lecturer to be solely responsible for a module (even when it has long been claimed (Cornford, 1997) that the modular construct actually fragments knowledge) versus the use of a Digital Learning team featuring a variety of expertise (Moore, 2012). Such a change in responsibility can, for the less secure individuals, be all too readily interpreted as a loss of authority and recognition. Responsibility and authority are, in the context of emotional intelligence, strongly linked (Beaumont, nd). Thus technology, time, and tradition can combine to challenge innovation in teaching practice. Table 1 summarises the challenges that online T&L innovations may require to address.

(See Table 1)

It may be reasonably expected that financial recompense (or its lack) to those producing and engaging with teaching materials would be a factor impacting on levels of adoption regarding innovations. While there may be an indirect link with levels of pay, the literature generally refers to 'reward'; "… perceived lack of reward and a lack of recognition from management and peers has consistently inhibited academics' willingness to develop e-learning environments" (Birch, Burnett, 2009). In an academic context, reward is perceived in various forms. For those universities where tenure is awarded, this would be regarded as one form of reward. However, in the context of this specific project, tenure was not an issue for any of the participants. Rather, the level of adoption related to the more usual factors cited within the literature, such as those noted by Martin and Nunes (2016):

> • *Having to deal with increased process-related demands of teaching;*
> • *Making extended provisions for the negotiation of teaching and learning activities;*
> • *Facing an overwhelming flow of content, questions and answers from students (de Vries et al., 2005; Kester and Sloep, 2009);*
> • *Intensified need to improve closeness and cognitive learning through mechanisms of instructor immediacy (Nagel and Kotze, 2010).*

Overcoming Challenges

Engaging staff in the adoption of innovative T&L practice requires a balancing of their motivation with their (perceived) needs, including all aspects of their logic and emotions concerning the innovation(s). These aspects can be particularly relevant when considered through the use of filters (see Table 1), in particular the meso and micro filters of department, discipline and individual pedagogical beliefs (Fanghanel, 2007). Lecturers are typically autonomous in their teaching practice and, due to their scholarly approach to learning, require robust research-based evidence in order to convince them about the adoption of any innovation regarding T&L practice. This is especially so when the barrier to adoption of change is within the micro-level filter of individual pedagogical beliefs. In the context of this paper, the barriers to adoption lay mostly within the realm of this micro-level filter, but there was also some evidence of barriers within the meso-level filter of the discipline and, to a lesser extent, the additional meso-level filter of the department. Macro-level filters, such as the institution, were found to be of little relevance in this context.

It was unexpected by the authors to find that the discipline filter was being applied in the manner of individuals who believe their own discipline to be subsidiary to some other principal discipline (Fanghanel, 2007), particularly given that material was being delivered at postgraduate level. However, there was evidence that several workgroup members regarded the built environment discipline as being subsidiary to the architecture discipline within the meso-level filter of the department. This specific aspect of the project is worth noting in that it possibly reflects a uniquely UK perspective based on historical relationships within the construction industry and may therefore not occur elsewhere.

For learning to take place, issues of knowledge, attitude and skills have to be addressed (Cervero, 2013; Gagne, 1962). To successfully innovate T&L practice, lecturers need to upgrade their knowledge, modify their attitudes and improve their skills. The best approach to achieving this is for managers to take into account staff motivation and needs. For example, evidence can be provided that a change from a lecture-based approach to a

constructivist approach (Huba, 2000) can increase both engagement and depth of learning for students. Working with 'engaged' students can result in teaching staff being able to disseminate their knowledge more readily, thus fulfilling their passion for contributing to their area of expertise (a 'need'). A move away from sage-on-the-stage lecturing and towards a team based approach to e-learning can save precious time for academics through making best use of a range of expertise and skills, thereby allowing space for additional scholarly or research activity. In addition, the enabling of diverse contributions to teaching materials can also enhance the learning experience for students. However, if these benefits are to be achieved a concerted effort to provide academics with a greater awareness of the capabilities and limitations of specific e-learning technologies becomes an imperative component of the innovation 'package'. This does not mean that academics need to become experts in the intricacies of any selected technologies, particularly if they are supported by a member of the workgroup / team who is an expert. These issues were considered in the development of the research methodology relevant to this particular project.

Methodology

Pragmatism

The researchers were aware that it would be challenging to carry out any research in the context of:

- An aging staff profile wherein approximately one third of staff would not be recognised as formally research active (with research here being differentiated from scholarly activity).
- The majority of staff possessing no in-depth knowledge of e-learning technologies and practices.
- Pessimism concerning catching-up with (much less competing with) what were perceived to be major e-learning players.
- A low level of available resource (primarily time).

Therefore the methodology had to be pragmatic in the context of such challenges.

The time aspect of both implementing innovation and concurrently carrying out research was a key factor in the decision concerning the extent of innovation to be implemented. Research in this area is typically undertaken on the basis of teaching being an interaction between individuals (in the initial context of this research, lecturers and students; no DL/e-learning specialist was involved at this point). Initial considerations of appropriate methodology were informed by the literature on approaches to teaching based on lecturers' beliefs (Dunkin, 2002; Entwistle et al., 2000; Entwistle, Walker, 2002; Kember, Kwan, 2002) as there was an acceptable level of consensus amongst these researchers regarding T&L practice by university lecturers.

Theory O

By regarding the implementation of innovation as a change in the T&L environment, the researchers were guided by the assertion that change can be delivered by two approaches:

1. Gradual/incremental change (dependent upon an accurate assessment of an organisation's capability).
2. Rapid/immediate change (typically to quickly achieve a perceived economic value).

The latter is sometimes referred to as 'neutron bomb' change (rapid change of culture whilst leaving the infrastructure unchanged). The threats presented by the project adopting a rapid approach to implementing innovation were identified as being a loss of focus and a higher level of resistance. These two approaches to implementing change are presented by Nohria and Beer (2000) as Theory O and Theory E respectively. Theory O emphasises the development of culture and human capability through individual and organizational learning (process of changing, obtaining feedback, reflecting, and making further changes) with a resultant strong psychological contract between an organisation and its staff. Theory E emphasises dramatic actions, heavy use of financial incentives and significant restructuring, none of which were considered to be realistic options within the environment relevant to this project. A Theory O approach was therefore deemed the most appropriate approach to change for the research project to adopt, particularly as in this specific case there was perceived to be a need to build a 'new' psychological contract, not only with the staff but also with the users (the students).

Student Consultation

The student aspect of the research methodology decision presented two specific challenges:

- Ensuring an ethical methodology.
- Recognising that certain data and information concerning the sample would not be readily available within the schedule for implementation of both the pilot study and roll-out phases.

The researchers focused on ensuring that the students involved were fully aware of the proposed changes, were given opportunity to ask as many further questions as they needed, and were all in agreement (sanctioned the implementation) prior to the research commencing. It was decided that the emphasis, as far as the student sample was concerned, within the pilot study and roll-out phases would be on obtaining regular feedback as innovations were implemented. This feedback was regarded as qualitative in nature; students reported a majority support for the changes to the modules, along with submitting two self-reflections each on their 'new' learning experience.

Preparing Staff

With regard to the staff sample, a qualitative research approach was again taken. One of the researchers acted solely as an observer during meetings, presentations, workshops, throughout the pilot project (see: *Issues identified* section below) and the roll-out phases. The other researcher was a participant observer, acting as a lecturer, attendee at presentations, and participant in workshops. Innovative practices were discussed and strategized during meetings at both the School and Senior Team (upper management) levels. Staff who attended presentations and workshops were exposed to possible innovations and were able to offer suggestions and ask questions. Presentations to demonstrate innovative T&L practice were given. During workshops, the practices were applied by the attendees. In addition, observation of behaviours and comments was carried out while staff engaged in informal discussions with their peers. The gathered data and information was then analysed (on the

basis of project socio-dynamics literature) so as to identify, in essence, the level of support (or 'buy-in') exhibited by each staff member as the pilot study and roll-out progressed. The level of support was evaluated as being at one of four increasingly supportive stances identified within the literature:

- *Resistant* (antagonistic and/or undermining responses),
- *Listening* (initial stage of adopting a synergistic approach),
- *Adopting* (incorporating innovation positively within their modules),
- *Promulgating* (seeking to convince others of the need to implement innovation).

The intention being to attempt to move individuals, where appropriate, up through the stances as the project progressed. It was recognised from the literature on socio-dynamics within projects (D'Herbemont, Cesar, 1998) that antagonistic behaviour (the *Resistant* stance) would be the most difficult to 'move' individuals from. It would be particularly difficult to move any workgroup member exhibiting behaviour at the antagonistic -4 level (seeks to win at any cost). Table 2 provides the measures for each of the 4 stances.

(See Table 2)

Pilot Study

The researchers were aware of the importance of providing evidence of benefits for the proposed innovations, rather than simply relying on the literature to provide a convincing argument; it was evident that there was a significant level of resistance to any changes to current (at the time) T&L practice. This awareness was heightened insofar as there was recognition of a generally low level of expertise and understanding regarding e-technologies or best practice e-learning amongst the sample. Thus the focus became on providing experience-based evidence as quickly as possible, with a pilot study approach being selected on the basis of it being recognised by most of the sample as being an appropriate method to test a proposed research method (van Teijlingen, Hundley, 2001). The pilot study was confined to only two modules so as to:

- Present minimal threat of reputational, etc. damage in the event of the innovations failing.
- Not require the direct involvement of all school staff.
- Represent the minimum worthwhile extent of innovation (thereby not requiring significant staff training prior to implementation).

Two modules were selected using the above criteria but they were not both from the same course. One module was selected from a construction project management course and one from a commercial management course, with both courses being at postgraduate level. The modules were studied by students who had at least one semester's experience with the then 'standard' approach to T&L, so as to allow comparative feedback. In addition, the two modules were each the responsibility of lecturers who had been proactive in developing their modules and were supportive (*Promulgating*, synergistic +3) of the innovation proposals. On this basis, sufficient support was obtained from both staff and students for the pilot study to proceed.

A vignette is provided elsewhere in the paper as a means of summarising this specific case.

Analysis

Data and information was gathered throughout the duration of the project and was both quantitative and qualitative in nature. Workgroup members were observed while participating in the workshops and presentations provided as a means of upskilling members, with the observations seeking evidence of behaviours indicating the level of support (as per Table 2) and any change in that support over time. Such observations did of course depend on all workgroup members attending the workshops and presentations. In the event of non-attendance without notification of not accepting the invitation, or of a conflicting meeting, etc. such behaviour was regarded as evidencing resistance. One member of the workgroup only attended three workshops (and no presentations) throughout the duration of the project. This member's behaviour was consistently evidenced as *Resistant*, and was mostly at the -4 level of antagonism (see *Appendix* for detail concerning the pilot study). As had initially been recognised when developing the project methodology, this individual proved very difficult to 'move' to a more supportive stance.

New teaching staff, coming to the school without preconception of practice and not in-post sufficiently long enough to become wedded to the workgroup's historic practice, easily adopted the pilot study innovations. Typically, such staff attended presentations and workshops voluntarily, whereas those staff who attended only because they had been instructed to attend did not easily change their practice, and were rarely the most engaged participants. Nonetheless, through allocating time to the exposure of staff to innovative practices (such as during meetings) an overall positive effect on the adoption of innovation was achieved. In addition, the pilot study's delivery of 'innovative' modules facilitated the benefits of the innovations to be consistently made more apparent to staff. Along with allowing theory to be more readily interpreted through practice, the evidence of positive student responses and expressions of preference for the 'new' approach reassured those workgroup members who were at the *Listening* stage. They were then able to make the decision to commence adopting innovative practice.

A further consideration with regard to the adoption of innovation is the catalysing of trust. Martins and Nunes (2016) refer to mechanisms of "social exchange" that act as trust catalysts, and in the context of this specific project the building of informal discussion (of innovative practices) could be considered an example of a social exchange mechanism operating as a trust catalyst. At a qualitative level, as the evidence of success increased (and by association the probability of failure decreased) the level of innovation adoption also increased. In addition, the tone of the discussion between workgroup members throughout the duration of the pilot study gradually became less defensive and more collaborative.

Key interpretations of the data and information (see Table 4 for full details) are presented as a timeline of change in Table 3.

(See Table 3)

It is acknowledged that the content of Table 4 can initially seem somewhat complex. However, once the key (relating to individual stances and engagement) provided is understood, along with an awareness that the contents of the Table's cells are not intended to be viewed as true acronyms (they are a compilation of an individual's stances and engagement with activities over time), the content can be more readily interpreted.

(See Table 4)

Vignette

A qualitative approach (based on formal and informal interviews with teaching staff and management) to examining the process required for the adoption of e-learning innovations, and the challenges that ensued, resulted in an initial impression of significant variations in lecturer readiness to innovate. The approach adopted follows that of other researchers focusing on issues of adoption in the online teaching and learning context, such as Martins and Nunes (2016). While the constraints faced by this particular project did not allow for as comprehensive a treatment as in other projects (the extent of the project is toward the smaller end of the scale in comparison to other research projects), it does nonetheless seek to be guided by the principles of symbolic interactionism:

- **Meaning** - Individuals act towards people or things on the basis of the meaning that they have given them;
- **Language** - Underpins meaning through 'naming'. Social interaction (speech acts) with others that result in 'naming' lead to meaning, which is seen as central to human behaviour;
- **Thought** – Dependent upon language. Is dynamic and changes as a result of ongoing interactions, either socially or internally (mental dialogue involving role-taking or consideration of other points of view) (Karpagam, 2009).

While the majority of lecturers have adopted innovations enthusiastically, there are others who have proved resistant (highly so, in a small number of cases) to adoption despite after-the-event student surveys and comments evidencing the value, from the student perspective, of the implemented T&L innovations. Student feedback identified value within innovations such as the increased assessment to support formative learning, use of participatory learning, and the increased use of multimedia.

Thus an evidence-based approach has helped with regard to widening the adoption of the innovations tested within the pilot study. For those lecturers who were considered to be early adopters there is evidence that they are motivated to now move to more challenging innovations; a small number are now actually proposing innovations. Whilst this may seem to be a wholly positive development, it is not without problems, such as lecturers possibly defaulting to an autonomous stance and implementing an innovation without fully understanding its relevance. In order to mitigate against such problems, the researchers produced an explicit development schedule for all postgraduate modules whereby module development progresses by adding agreed innovations at a set pace.

The researchers proceeded from several perspectives during this study, thereby allowing for the potential to empathise with, and recognise, behaviours of staff as suggestions were made, and their 'traditional' practices were modified by the implemented innovations. The perspectives included that of several lecturers, an e-learning advisor, an instructional designer and a programme manager.

Issues Identified As Innovation Practices Were Suggested

When changes to practice (see Table 4 for key innovation practices and Appendix for a summary of the Pilot Project) were initially proposed, lecturers were near-unanimous (with varying levels of conviction) in not supporting the changes. Typically they cited a lack of time within the context of the then current practice, and the impossibility of finding any additional time required for the assumed training with regard to innovative technologies and methods. These issues were mostly cited before any meaningful discussion, and therefore deeper understanding, of the proposed innovations had been carried out; simply identifying the proposed innovations was sufficient to result in an unsupportive response.

(See Table 5)

Subsequent detailed examination of workload data revealed that, while the majority of lecturers were indeed busy across a range of activities, the situation was not as extreme as the initial response indicated. The researchers, however, did not adopt the assumption that the workload data was 100% accurate, largely from an awareness that the lecturer role is not fully amenable to detailed workload data 'capture'. An empathetic approach to discussion around this issue was therefore adopted, with a 'win-win' stance being applied (in line with the concept of principled negotiation – Fisher, et al, 1981). The discussion then became one in which it was agreed that time was a scarce resource, but that the proposed innovations would, after an initial transition period, actually save time.

Nonetheless, the promise of a decreased workload did not meet with unconditional approval. The main concern voiced was that the innovations were untried (in the School context) and therefore there was the possibility of failure. No amount of research that illustrated the proof (of confirmed gains in other institutions) was enough to convince either the *Resisters* or *Listeners*. The proof ultimately had to be demonstrated in-house. This was achieved by identifying those lecturers least resistant to change and addressing their concerns on a one-at-a-time basis (time-consuming, but the only credible way forward) until the point was reached where they agreed to participate in the pilot study. This approach is in line with the tactic of segmenting the field of play as proposed by D'Herbemont and Cesar (1998). In order to reach this agreement, the researchers had to sacrifice some of the more challenging innovations, but sufficient innovations were retained to represent a credible degree of change.

Issues Arising After Innovation Practices Were Implemented

Simply put, as a result of the innovations, workload for the lecturers involved in the pilot study decreased by 20-30%. Obviously, there was a significant time investment with regard to producing new material and developing revised assessment vehicles. However, during the semester this investment resulted in a worthwhile reduction in workload.

An interesting unexpected finding that resulted from the pilot study was that, although workload was identified by some *Resisters* as a 'barrier' issue with regard to undertaking the required development work, offering to provide someone else to carry out the work also proved to be problematic. Lecturers are typically protective of their domains and take a pride in the currency of their material. Hence when they conclude that they personally are unable to find time to complete work required to update / develop that domain, they exhibit resistance to any suggestion of others doing it on their behalf; they worry about a loss of quality if they do not do the work themselves. Applying a teamwork approach, where the workload is shared by e-learning advisors, technical experts and tutors, is therefore not always welcome.

Furthermore, lecturers frequently appear to have a need to be autonomous and autocratic which can result in students' needs not being put first; the lecturer always knows best. However, the context of this 'Sage on the Stage' response within the pilot study indicates that it should not regarded as an example of narcissism: "... an all-pervasive pattern of grandiosity (in fantasy or behaviour), need for admiration or adulation and lack of empathy …" (Pamoukaghlian, 2010). In reality it is actually closer to the problem identified by Tate (2013): "…the biggest issue, especially with regards to the future of architecture, has to be the lack of emphasis on teamwork in university education." In short, even though some modules were delivered by more than one lecturer, these individuals were simply not accustomed to the practice of 'team' teaching.

The pilot study also identified some evidence that the person suggesting the change may have a bearing on the degree of uptake of innovation. For example, a T&L professional (non-lecturer) arguing the case for pedagogy was not given the same credibility as a colleague seen to have significant academic standing. However, a colleague seen to have equal academic standing could not carry enough weight to automatically be a game-changer. Finally, a manager, when mandating innovation, was listened to with reluctance. While the letter of the law might be carried out by a *Resister*, the spirit required for real innovation to be achieved and sustained was lacking, as evidenced by some instances of reversion to old material and approaches by *Resisters* being identified. Indeed, the most antagonistic of the *Resisters* never adopted any of the innovations throughout both phases of the project.

Suggestions for Assisting With Innovative Practice Uptake

Building a team for the delivery of courses takes time, but various strategies for team development can be considered. Weinberger (2010) discusses the merits of scripting for the development of collaborative behaviours. In industry, hiring practices reflect the need to build a team with complementary skills and behaviours. Hiring for academic school teams tends to reflect the need for subject matter expertise (and preferably a research track record) more than collaborative behaviours. Whilst accepting that the higher education sector is not composed of homogenous institutions, therefore leading to variability concerning the interplay between teaching and research, there is evidence that institutions are, overall, placing increasing importance on teaching and learning. In such an environment (and arguably more so in the context of online delivery) the team of teachers and pedagogical and digital delivery experts may gain more prominence (Moore, 2012). Team building strategies were not considered in this study as time and budget did not permit. However, the time that has passed since the beginning of the project has resulted in some relationships (both new and old) among team members evidencing an increasing e-learning awareness and willingness to assist with innovation adoption.

The lure of the known should not be underestimated in that this will not be overcome without a strong impetus for changing practice. However, how this impetus is given and received also requires consideration. For example, the manner of support from management played a key role in the level of adoption of innovation within both the pilot study and subsequent period. It was found that mandating innovation created more barriers as a result of recipients (of imposed innovation) becoming more resistant. It was also found that some *Listeners* supported (talking the talk) innovation while conversing with their line manager, but their T&L environments were subsequently found to be lacking evidence of best practices. Both these problems are to the detriment of delivering improved T&L practices but can become

more detrimental if management are not perceived as behaving in a supportive manner. An example of this occurs when management has no presence at training sessions but requires that all others attend; the lack of presence is interpreted (by the *Resisters*) as evidencing a lack of support. The impetus for change needs to be consistently supported in ways that are palatable to lecturers.

A range of adaptation responses were identified within the study. For example, one lecturer adapted easily to post-pilot project innovation-related changes, largely because the pilot study illustrated the benefits of innovations. The background of this lecturer was the construction industry and comprised no previous experience as a lecturer. It would be tempting to assume that this workgroup member had not been sufficiently exposed to academic 'prejudices' to form a meaningful emotional attachment to them. However, little evidence was found to support such an interpretation, but evidence was found for the application of teamwork and efficiency-seeking behaviours typical of an industry practitioner. In a sense, there was less evidencing of an academic ego than for some other members of the workgroup.

A less positive adaptation response has been exhibited by one other lecturer who has yet to engage in the innovation process at all. This lecturer's response has included refusing even to acknowledge any change in their work environment resulting from the innovations implemented thus far. Instead, this lecturer has, wherever possible, effectively withdrawn from the delivery of any modules where innovation has occurred. *Resisters* such as this workgroup member represent an intriguing challenge to future research into the achieving of innovation within T&L practice. Nonetheless, the overall findings from the pilot study concur with previous research findings (Kotter, 1995) in that, as initial innovations were adopted, additional innovations, along with further developments to innovations already adopted, appeared to be more easily accepted.

Conclusions

A review of key challenges has been presented, along with a discussion of the overall implementation of an e-learning innovation project. Specific reference has been made to the pilot study and roll-out phases, and how these phases provided data and information relevant to the recognition that the overall project was closely aligned to a Theory O perspective on change. A hoped-for benefit of the overall project was to evidence the realism of seeking to create a stronger psychological contract between both staff and students with regard to the implementation of e-learning innovation. The findings of the research indicate that it is possible to achieve this but not in all cases; the research evidences that a small (7%) percentage of the staff sample proved to be consistently resistant to innovation.

The researchers, when presenting their conclusions, are aware of the possibility that these may be argued to have fallen prey to the representativeness heuristic (erroneous extrapolation from a relatively small sample). They therefore wish to be clear that there is no suggestion that the behaviours found within their study are representative of all other institutions seeking to implement e-learning innovation. While some characteristics of this project will be shared with some institutions, not all of the characteristics will be shared with all other institutions. For example, this particular workgroup find themselves in the relatively unusual situation of working in conjunction with an architecture 'unit'. Furthermore, the pragmatic nature of the research methodology is recognised as a factor constraining any suggesting of a wider applicability. Nonetheless, the findings are largely congruent with the literature regarding

challenges faced by those seeking to implement innovation. They also evidence that it is possible to achieve a worthwhile reduction in resistance to such implementation, and produce change enthusiasts willing to promulgate the innovations.

The most insoluble challenge with respect to this type of research is suggested as being the nature of the relationship between:

- The time taken to evidence an innovation's merit (so as to gain effective adoption).
- The rate at which e-learning technologies (along with related best practice guidance) are evolving.

In the context of an environment in which there is less than 100% support for innovation it therefore seems inevitable that there will always be some degree of lag by which the 'wetware' never quite catches up with the hardware and software. A secondary issue that may be a factor is the time required to sufficiently understand why an individual resists innovation; are there simply too many Monitor-Evaluators (to use Belbin's team member types) in built environment postgraduate education? This is an aspect of the project that would merit further research.

Overall, the researchers recognise that more work needs to be done to fully realise consistent and on-going online teaching and learning innovation. However, the research is argued to be sufficiently robust to support the following recommendations:

- Do not speculate regarding possible innovations before clear and detailed documentation has been developed. Doing so simply initiates resistance on the basis of assumed extra workload.
- Do not seek to impose innovation. Adoption of a principled negotiation approach, in conjunction with detailed documentation, is preferable.
- Assess the 'stances' of the 'players' (lecturers, etc.) to be affected by the proposed innovations prior to commencing any discussion of the innovations.
- Be certain regarding any proposed innovations that can be sacrificed during negotiations (but may be revived in a later project).
- Do not rely solely on evidence from research carried out elsewhere to carry the day; 'they' are different from 'us'.
- Assume that subject matter experts (lecturers) will not always easily accept any offers of others completing any work related to revising / developing their material.
- Assume that lecturers will not readily transit to being team players.
- Do not assume that using an academic with significant standing as the lead for an innovation project will lead to less resistance to the proposed innovation(s).
- Give considerable thought to the 'message' that will provide the initial impetus for the change represented by innovation proposals.

At present, overall organisational re-profiling of the focus university's staff resource and course provision has resulted in a short-term delay to proceeding with further research. In addition, the changing market for the education product represents a valid reason to reappraise the nature of any further innovation proposed for implementation. Nonetheless, planning is on-going with regard to how the innovations implemented to date can be more robustly embedded, and what form (scope and time-scale) further innovations can realistically take once the re-profiling activity is completed.

Appendix

Pilot Study

Situation

A reworking of the Distance Learning (DL) format and content for two modules of a built environment postgraduate course, as a pilot project, supported by best practices for DL and pedagogy.

Activity

Five presentations given to DL Module Facilitators on the topics of: DL Teams, DL Best Practices, Writing Topic Study Guides, and Writing Learning Outcomes and Assessments by the Distance Learning Coordinator for the Postgraduate Programmes. They have been recorded and are available for viewing by all staff. Two modules have been re-worked by the Module Facilitators in line with specific suggested best practices:
1) Providing a study guide with a path for students to construct their own learning (as opposed to a 'sage on the stage' re-iteration of a lecture), and containing questions to promote critical thinking rather than simply facts available for copying and pasting into a forum.
2) Re-formatted and re-deployed study materials to enhance ease of learning.
3) Assessment practices to support formative learning as opposed to only summative assessment.

Impact

- Students were initially surprised by the approach as it requires more involvement / participation on their part.
- A student satisfaction survey reported majority support for the changes to the modules.
- Students submitted two self-reflections on their learning and have supported the continuous, formative assessment, using weekly forums, as being very useful to their learning.
- Their weekly posts kept them together as a cohort, enabling them to learn from each other as well as from the content, taking advantage of their various previous experiences and strengths.
- Their tasks have given them confidence in such areas as leadership of virtual teams and time management.
- Questions posed in the weekly study guides have been answered and the knowledge applied immediately in students' work locations.
- Module facilitators found the new format saved them time, and they have been pleased with the learning outcomes.

The decision was taken to roll out the majority of the Pilot Project practices across all stages of the postgraduate programme from Semester 1, 2014, with subsequent development of further innovative practices for adoption in a staged manner.

Reflections

DL is a rapidly developing field with a number of different approaches taking advantage of best (current) pedagogical philosophies. The pilot study modules provide some examples of alternative practices. Student feedback illustrates the pilot modules' success:

1st half of module

- "I have found the contributions by my peers in the module forums equally helpful. Being a rather inexperienced individual in industry terms, it is useful having senior people posting their thoughts as well as their examples from the workplace as this allows me to attribute the academic knowledge I have gained to real life situations."
- "The interaction through forums has helped me to broaden my perspective of the issues at hand as we share the diverse experiences and offer insights on how to deal with issues from personal experiences. This interaction in my opinion is very vital as it is offers an intersection point for the theoretical and practical aspects of the module, which helps in cementing the learning process."

2nd half of module

- "The content and level of the debates from topic to topic have significantly helped to improve my thoughtfulness and research ability."
- "… more importantly has been the encouragement and unrelenting effort that the entire team put in into the posts that personally inspired and encouraged me to want to do better. This teamwork I feel was critical to ensuring that the weekly discussions remained alive and relevant without being left out."
- "Finally, I am quite happy to say that this module when compared to all the modules I have done so far has helped me gain a lot of understanding and knowledge about the various topics discussed each week. This is mainly because of the weekly forum tasks and the reading materials provided."

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Table 1.

Challenges encountered within a project implementing innovation in online teaching and learning practice.

Type of challenge	Related issues
Emotional attachment	• Perceived value of 'tradition'. • Unwillingness to 'abandon' F2F skills. • Perceived lack of 'connection' with online students. • Unwillingness to move from teacher-centred delivery to student-centred delivery.
Delivery teams	• Perceived loss of lecturer sapiential authority. • Identification of subject matter experts (not always lecturers). • Maturity required in response to 'transiting' leadership within the team. • Lack of recognition of differing skills beyond the delivery of lectures. • Inability to accept the need for a variety of roles within a team context.
Irrelevant innovation	• Perceived lack of value in the proposed innovation(s). • Perception that any value is solely to the benefit of those proposing the innovation(s). • Perception that an innovation may be sound in principle but is not required by 'me'.
Wilful misunderstanding	• Unwillingness to evidence that the innovation is fully understood. • Deliberate presentation of inaccurate understanding so as impede implementation.
Naïve misunderstanding	• Lack of expertise prevents correct understanding of proposed innovation(s). • Poor communication / presentation regarding innovation(s) prevents correct understanding.
Insufficient time	• Gap between actual and required levels of skill cannot be bridged in the time allocated. • Overly ambitious (qualitatively) innovation(s) are proposed, even if there is no skill 'gap'. • Overly ambitious (quantitatively) innovation(s) are proposed, even if there is no skill 'gap'. • Training / upskilling requirements underestimated.
Student response	• Perception that existing students will not respond positively to innovation(s). • Over-engagement with student consultation process results in delays and / or confusing / contradictory information.
Macro filters*	• The institution. • External factors. • Academic labour. • Research-teaching nexus.
Meso filters*	• The department. • The discipline.
Micro filters*	• Individual pedagogical beliefs.

* For a more detailed discussion of filters, see Fanghanel (2007).

Table 2.

Workgroup member stances and evidencing behaviours (based on D'Herbemont, Cesar, 1998).

Stance	Behaviours
Resistant	Antagonistic -4 Wants to win at any cost -3 Surrenders when not the strongest
Listening	Antagonistic -2 Will negotiate to get a 'good deal' -1 Expresses no personal point of view
Adopting	Synergistic +1 Unwilling to take initiative but will follow instruction +2 Follows initiatives (without instruction)
Promulgating	Synergistic +3 Gives up if not supported. +4 Gives unqualified support

Table 3.

Timeline of stance changes (As a percentage of total staff).

Stance	**Pilot.** (11 staff)	**Roll Out.** Phase 1.		**Roll Out.** Phase 2. (14 staff)		**Roll Out.** Phase 3.		**Roll Out.** Phase 4.	
	Sem. 2 2013/14	Start Sem. 1 2014/15	End Sem. 1 2014/15	Start Sem. 2 2014/15	End Sem. 2 2014/15	Start Sem. 1 2015/16	End Sem. 1 2015/16	Start Sem. 2 2015/16	End Sem. 2 2015/16
Promulgating	0	18	18	14	14	14	14	21	36
Adopting	9	0	18	36	36	51	58	51	43
Listening	55	64	46	36	36	28	21	14	14
Resisting	36	18	18	14	14	7	7	7	7
Unrated	0	0	0	0	0	0	0	7	0

Table 4.

Profile of individual staff support (stance), role and training undertaken.

	PILOT				**ROLL OUT**															
	SEMESTER 2 2013/14				SEMESTER 1 2014/15				SEMESTER 2 2014/15				SEMESTER 1 2015/16				SEMESTER 2 2015/16			
	Feb	Mar	Apr	May	Sep	Oct	Nov	Dec	Feb	Mar	Apr	May	Sep	Oct	Nov	Dec	Feb	Mar	Apr	May
Staff	**Training (PRE = Presentation)**								**(WKS = Workshop)**											
	PRE	**PRE**	**PRE**		**PRE**	**PRE**	**PRE**		**WKS**	**WKS**	**WKS**				**WKS**					
T1	RE +	RE +	RE +	RE	LET+	LET+	AET+	AET	AE +	AE +	AE +	AE	AET	AET	AET+	AET	AE	PE	PE	PE
T2	E +	LE +	LE +	LE	LET+	AET+	AET+	AET	AET	AET	AET	AET	AET	AET	AET	AET	PET	PET	PET	PET
T3	RE +	RE +	RE +	RE	LET+	LET+	LET+	LET	LE	LE	LE +	LE	AET	AET	AET+	AET	AE	AE	AE	AE
						LE	LE		LE	LE										
T4	E +	LE +	LE +	LE	LE +	+	+	LE	+	+	LE +	LE	LET	AET	AET	AET	AE	AE	AE	AE
								LET	LE	LE						LET				
T5	E +	LE +	LE +	LE	LET+	LET+	LET+		+	+	LE +	LE	LET	LET	LET		LE	LE	LE	LE
T6	E +	LE +	LE +	LE	LE	LE	LE	LE	LE	LE	LE	LE	AET	AET	AET	AET	AET	AET	AET	AET
N1									AET+	AET+	AET+	AET	AE	AE	AE +	AE	AET	AET	AET	AET
N2									AET+	AET+	AET+	AET	AE	AE	AE +	AE	AET	AET	AET	AET
N3									AE +	AE +	AE +	AE	AE	AE	AE +	AE	AE	AE	AE	AE
S1	LET+	AET+	AET	AET	PET+	PET+	PET+	PET	PET+	PET+	PET+	PET	PET	PET	PET+	PET	PET	PET	PET	PET
S2	AET+	PET+	PET+	PET	PET+	PET+	PET+	PET	PET+	PET+	PET+	PET	PET	PET	PET+	PET	PET	PET	PET	PET
									RET	RET	RET									
S3	RE	RE	RE	RE	RE	RE	RE	RE	+	+	+	RET	RE	RE	RE	RE	RE	RE	RE	RE
S4	RE +	RE	RE	RE	RE	RE	RE	RE	RE+	RE	RE	RE	LET	LET	LET	LET	AET	AET	PET	PET
S5	E +	LE +	LE +	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE

KEY

R = Resistant
L = Listening
A = Adopting
P = Promulgating

E = Attended meeting
+ = Attended workshop
+ = Attended presentation
T = Teaching

T# = Regular teaching workgroup
N# = New staff
S# = Senior Team (+ Teaching)

Table 5.

Key innovation practices implemented.

Innovation	Practice
Distance Learning Team	Actively involve non-lecturers (Instructional Designer, etc.)
Distance Learning Best Practices	Move from ‘Sage on the Stage’ to ‘Guide on the Side’
Writing Topic Study Guides	Promote critical thinking and not simply present facts available.
Writing Learning Outcomes	Appropriate taxonomy.
Assessment	Support formative learning as opposed to only summative assessment.