

Staff Development and Institutional Support for Technology Enhanced Learning in UK Universities

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Abstract. This paper presents the findings of a mixed methods study conducted in the context of Higher Education Institutions (HEIs). More specifically, it focuses on the staff development needs of tutors who teach in blended and online environments, the ways HEIs in the United Kingdom (UK) address these needs and institutional issues around the deployment and support of Technology Enhanced Learning (TEL) by campus-based institutions. The informants in both phases of this research were the heads of e-learning in various UK HEIs. Using an online questionnaire, quantitative data were gathered on the various ways that the staff development needs of the lecturers in blended and online learning have been addressed by UK HEIs. During the second phase of this research, eight semi-structured interviews were conducted. The findings from both phases are integrated in the results section of the paper.

Keywords: staff development; technology enhanced learning; blended learning; online learning; HEIs

1 Introduction - Background literature on staff development and institutional support in the area of TEL

TEL is an inclusive term that encompasses blended learning, distance learning and even classroom-based activities assisted by digital technology. The Higher Education Funding Council for England (HEFCE) is now using this term as a replacement of the term e-learning which 'can now sometimes be too narrowly defined to describe fully the widespread use of learning technology in institutions' (HEFCE 2009, p.1).

The UK Professional Standards Framework (UKPSF), endorsed by the Higher Education Academy (HEA) recognises the professional standards for those involved in teaching and supporting learning within UK HEIs. In its core knowledge category, which describes what is needed in order for the various teaching activities to be executed at a high level, 'the use and value of appropriate learning technologies' is included (HEA UKPSF, 2011).

The constantly increasing integration of learning technologies in the curriculum in the 21st century, such as VLEs and web 2.0 software, has made the pedagogy of TEL more central to university practice. Therefore, staff development activities in the area of TEL become increasingly important. However, blended and online course provision takes a lot of planning and requires IT infrastructure, platforms, administrative processes and online tutors-moderators in order to succeed. Many authors (Garrison & Vaughan, 2008; Laurillard, 2002; MacDonald, 2008; Palloff & Pratt, 2007; Salmon, 2003; Tait & Mills, 1999 & 2003) have highlighted the fact that, for online learning to succeed, staff development is of crucial importance. According to MacDonald (2008, p.177):

The effectiveness of a blended course will be greatly influenced by the skill, enthusiasm and availability of the staff who work on it. They will need staff development to be effective, unless they already possess the relevant experience.

Moreover, Salmon (2003, 2011) argues that an online tutor-moderator needs to develop technical skills but more importantly, become aware of new teaching practices that can be implemented online in order to become effective facilitators in online environments.

Laurillard's (2002, 2012) conversational framework for the effective use of learning technologies emphasizes the need for an effective organisational infrastructure to be in place. According to her, a learning organisation needs to be adaptive to the changing environment they find themselves in. Laurillard's framework is a dialogic (conversational) process that takes place on two levels: the discursive level with a particular focus on theory and conceptualising, and the experiential level where the focus is on practice, activity and procedure building. While both levels are interactive, interactions at the discursive level are taking place within the members of

the community whereas in the experiential level the interaction is rather adaptive; in other words the individual in the experiential phase is trying something new, adapting their actions depending on their results. Laurillard's conversational framework for instruction accommodates continuous interactions between the instructor and the learners through various media types. The online environment is used in order to facilitate learners' adapted actions and conceptions through reflection based on the instructor's feedback; the whole process is rather dynamic, as the instructor takes into account the learners' previous actions in order to modify the description of the task and tailor his/her feedback to the learners.

Staff development is critical in the implementation of TEL in one's practice (Garrison & Vaughan, 2008; Laurillard, 2002; MacDonald, 2008; Palloff & Pratt, 2007; Salmon, 2003; Tait & Mills, 1999 & 2003). Currently, there is a variety of approaches to staff development on blended and online learning including staff training sessions, workshops, seminars, CPD short courses and online resources. (Almpanis, 2012) Also, pedagogical aspects of online learning are often covered as part of the Postgraduate Certificate in Learning and Teaching or else Postgraduate Certificate in Academic Practice (PGCLT/PGCAP) course aimed at new lecturers. (Almpanis, 2012). These approaches currently in use by UK HEIs for staff development in the area of TEL coupled with wider institutional considerations in the area of TEL are the main focus of this research.

2 Research design – Methodology

The research design has been selected in order to align with the main research questions of this study, which focus on the staff development needs of the academic staff involved in blended and online course delivery. The main questions of this study are:

1. What provision do UK HEIs make for staff development in the area of TEL?
2. According to the heads of e-learning, what do lecturers need to know in order to deliver blended and online learning courses effectively? Are these needs addressed by UK HEIs?
3. What institutional approaches are required for TEL to be effectively embedded in the curriculum?

A mixed methods research (MMR) design was adopted for this research as it can best address the complexity of these questions. The first research question is mostly addressed based on quantitative data gathered via an online questionnaire, while the second and third questions are addressed qualitatively, based on data gathered via semi-structured interviews with eight heads of e-learning (HeLs) The sequence for data gathering used was: the questionnaire was sent out in late October 2011 and it was open for three weeks until the middle of November 2011, while the interviews took place between January and March 2012. Both data collection methods used the same informants, the HeLs, for consistency and reliability purposes. However, the interviews used a smaller sample – eight – compared to the questionnaire, which returned 27 responses out of 118. The selection of the heads of e-learning to be informants of this research provided a number of advantages such as fair representation of UK HEIs, as each UK institution can have only one representative in the heads of e-learning group.

The interview data were coded by open-coding, a procedure by which the data were conceptualised. Subsequently, a list of conceptual categories was created. The survey of the literature offered useful background knowledge and informed the creation of the questionnaire and the interview questions, but also was subsequently used to enrich the discussion of the research results.

2.1 Data analysis

Initially, quantitative data were gathered on the various ways that the staff development needs of the lecturers in blended and online learning have been addressed by UK HEIs. Simple frequencies and cross tabulations were applied to the data. The interview case studies have been written as descriptive narratives first and following open coding, various themes emerged. Open coding was used initially to uncover, develop and name concepts in order to open up text and expose the thoughts and ideas contained within them. Following that, broader categories (themes) have been developed. Once saturation occurred in categories and no more information was able to be extracted, categories were then integrated and refined.

Findings from both phases are integrated in the results section of this paper in which the two data sets are merged by bringing the separate results together in the interpretation. The quantitative data analysis proceeded from descriptive to inferential analysis in order to build a greater refined analysis. Qualitative data

analysis began with coding and proceeded to creating categories (themes). This is in line with Creswell and Plano Clark (2007, p.137) according to whom:

Two techniques are available for merging the quantitative and qualitative data: Transform one type of data to make the qualitative and quantitative datasets comparable and then compare the datasets, or compare the data without transformation through a discussion or a matrix.

The latter way of merging qualitative and quantitative data – through discussion – was followed in this research due to the fact that some of the data gathered were complementary rather than directly comparable.

2.2 Research generalisability – legitimacy – reliability

The validity of the data and the results is an important component of research. According to Creswell and Plano Clark (2007) in quantitative research, validity means that the researcher can draw meaningful inferences from the results to a population. In this context, the quantitative data gathered via the online questionnaire are, if not representative, at least indicative as the 27 participants out of a possible 118 represent over 20% of the HeLs who subscribe to the HeL forum in the UK. As the questionnaire was e-mailed to all HeLs twice, there was no selection bias either. In terms of self-selection bias, it could be a possibility that those with the stronger views on e-learning might have volunteered themselves to participate in further research and be interviewed, but this was anticipated from the beginning. The interviews aimed for in-depth data to be gathered knowing that due to their small number, interview findings would be illustrative rather than representative.

In terms of the qualitative data gathered through the interviews, 13 of the questionnaire respondents volunteered to participate, providing their institutional email address in order to be contacted for an interview. Ten out of them were contacted based on the richness of their responses to the questionnaires, and the eight who responded were interviewed via Skype. The informants represented a wide range of UK HEIs as there was an equal split between pre-1992 and post-1992 institutions with four participants of each. Participants represented institutions that included members of the Russell group and other research-orientated institutions, but also other, more teaching-focused institutions from different parts of England and Wales.

As this is a mixed methods study, validity is defined as the ability to draw meaningful and accurate conclusions from all the data in the study. Thus validity in this context denotes the 'inference quality', the accuracy with which the researcher draws inductive and deductive conclusions (Tashakkori & Teddle, 2003). This research is only to a certain extent generalisable, as it indicates the situation of how TEL is approached by over 20% of UK HEIs from expert informant perspectives; due to the different ways universities in other countries may be structured, its findings and conclusions may have limited transferability to other contexts, but still it might be of interest to them for reference and for comparative purposes.

3 Results

This section discusses the findings of both phases of this research by merging the two data sets and bringing the separate results together in a holistic interpretation.

3.1 Staff development opportunities around TEL

Most universities represented in the survey offer a wide variety of staff development sessions/events for their academic staff that covers a range of skills and pedagogical considerations of various learning technologies. This shows that participating institutions are trying to up-skill their staff by addressing their needs in the area of TEL in a flexible manner, offering them plenty of choice.

The duration, frequency and uptake of the training sessions varied widely; some institutions offered training sessions at regular intervals to suit the academic timetable, others 3 to 4 times a year. However, most institutions would deliver tailored sessions on request for specific departments or course teams and there seems to be a shift towards small group training and one-to-one training on request.

The offerings for training in the use of various learning technologies to academic staff reflected the uptake and usage of those technologies as discussed in the interviews. The use of VLEs for content delivery were the most popular staff development sessions, as training sessions on their use were provided by all institutions participating in the survey as shown in figure 1. Furthermore, the vast majority of institutions that participated

in the survey offered organised events on the pedagogically effective use of the VLE as shown in figure 2 and offered online case studies too, as shown in figure 3.

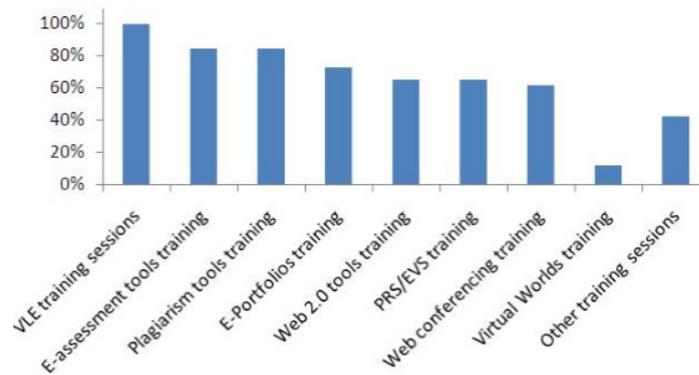


Figure 1: Responses to the question ‘Does the university offer any of the following hands-on training sessions on how to use the following tools? Please tick all that apply’ (Percentages shown above are out of 26 responses).

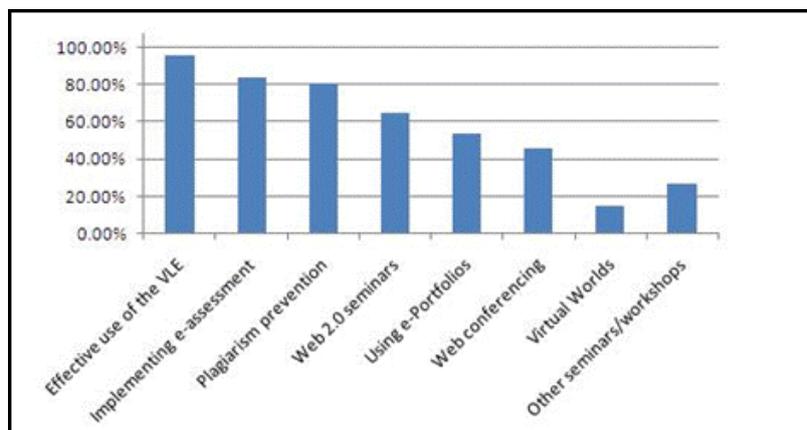


Figure 2: Responses to the question ‘Does the university offer any of the following workshops/seminars/internal events or internal conferences on the pedagogically effective use of the following learning technologies? Please tick all that apply’ (Percentages shown above are out of 26 responses).

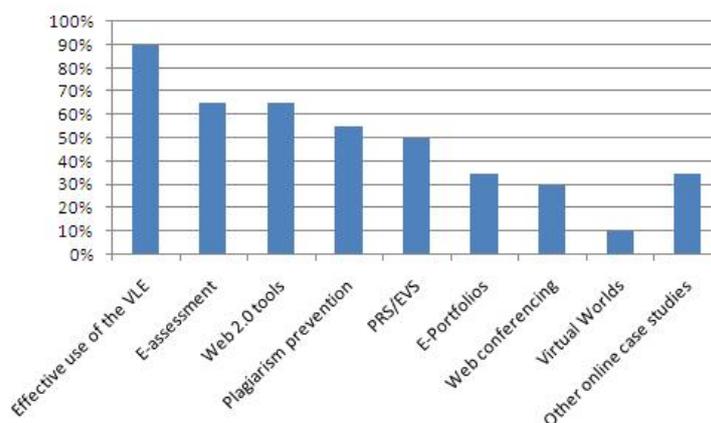


Figure 3: Responses to the question ‘Does the university offer any online case studies on the following learning technologies?’ (Percentages shown above are out of 20 responses).

Following the use of the VLE for content delivery, e-assessment seemed to be the most popular practice involving learning technology. Both hands-on training sessions and other events focusing more on the pedagogically effective use of e-assessment came up equally high and were on offer by most HEIs participating in the survey (figures 1 and 2) while two-thirds also provided online case studies (figure 3). This was also reflected in the interviews, as e-assessment came up high as a common institutional target for campus-wide TEL implementation among the interview participants. The deployment of e-assessment was reported to be a common institutional target in the interviews too.

Plagiarism detection and prevention via tools like Turnitin was also highly popular in hands-on training sessions offered (22 of 26 responses, figure 1) but also in events regarding its pedagogically effective use (21 of 26 responses, figure 2), which would probably be in the prevention of plagiarism. Eleven of the participating institutions also provided online case studies on plagiarism prevention and detection (11 of 20 responses, figure 3).

In terms of web 2.0 tools such as blogs and wikis, approximately two-thirds of participating institutions offered hands-on training sessions (figure 1) as well as workshops on their pedagogically effective use (figure 2) and online case studies (figure 3). These events/case studies would aim to increase uptake among staff and raise staff's digital skills in order to enable them to support constructivist and social constructivist learning, utilising online tools.

Training on personal response systems (PRS), or else electronic voting systems (EVS), or clickers, was provided by two-thirds of participating institutions (figure 1), while half the institutions that took the survey were also offering online case studies on the use of PRS (figure 3) in order to add interactivity in the classroom enabling lecturers to ask students questions in the classroom, get real-time feedback from students and check their understanding on various topics. According to Mazur (1996) the use of PRS can transform a passive lecture to a more engaged, interactive one that can also support peer-instruction when students are asked to discuss their responses in pairs.

E-portfolio sessions were also popular among participating institutions; approximately three-quarters were offering training sessions (19 of 26 responses, figure 1), approximately half of them (14 of 26 responses, figure 2) were offering workshops or other events focusing on the pedagogically effective use of e-portfolios and approximately a third were offering online case studies on their use (7 of 20 responses, figure 3). E-portfolio systems can be used in courses with a strong reflective element and it was used in all physiotherapy courses in one case; it can also be used for assessment as shown in another case in which the e-portfolio was used for two of the assessments in the postgraduate certificate in teaching and learning course, so that lecturers would be able to support its use as personal tutors with their students. Indeed, e-portfolio systems can support flexible learning in professional, work-based courses in particular, as they offer participants a space to gather their evidence about their practice.

Hands-on training sessions on web conferencing software were on offer by more than half of the institutions participating in the survey (16 of 26 responses, figure 1), while slightly less than half offered workshops and other events on their pedagogically effective use (12 of 26 responses, figure 2) and 6 offered online case studies (6 of 20 responses, figure 3). Web conferencing tools can be used to bring together participants that are geographically dispersed, but as pointed out by one informant it can be challenging for some academic staff to use this technology and may require extensive training. This is also backed up from the relevant literature, according to which synchronous facilitation via web conferencing software can be demanding in terms of staff training (Reuschle & Loch 2008, Vitartas, Rowe, & Ellis, 2008; Wang & Hsu 2008).

Virtual worlds like Second Life were the least popular in terms of staff training provided among all aforementioned learning technologies; only 3 of the 26 institutions answering this question offered training sessions in the use of Second Life (figure 1), while 4 offered seminars on its pedagogically effective use (4 of 26 responses, figure 2) and 2 offered online case studies (2 of 20 responses, figure 3). This is likely to reflect the fact that the use of Second Life has not become mainstream in higher education and is only used by specialist departments in few institutions. Experiential learning via Second Life is also resource heavy and its use seems to be limited among participating institutions due to the increased and often non-sustainable amount of resources it requires (Gorman, 2012). This could be due to the fact that virtual worlds require a significant amount of upfront investment in order to work for educational purposes. The challenges for educational use

of Second Life include time, money, up-to-date technology and the amount of training required to become proficient in its use (Ash, 2011).

Other sessions on learning technologies provided by participating institutions were reportedly sessions on online media, screencasting, podcasting, lecture capture and other classroom audio-visual equipment, audio and video editing, iTunes, twitter and office tools. These sessions highlight the broad range of staff development sessions provided by some institutions that includes multimedia content creation and sharing – podcasting, screencasting, audio and video editing, lecture capture, iTunes – but also micro-blogging – Twitter – and office tools. However, no specific data on those sessions offered is attempted here, mainly due to the fact that these were not offered as one of the options in the questions but were added by participants in the ‘other’ field. Their lack of inclusion in the given options was due to the fact that the research focus was more on the established learning technologies supported institutionally rather than on applications that could be more popular in some areas than in others.

The technical skills required for effective online teaching can be varied depending on the task; however, basic digital and web literacies and an understanding of the system and the tools in use are said to be often adequate for the lecturers involved in such programmes, provided that this is coupled with a pedagogical understanding of the tools used, according to the HeLs. Institutions are trying to address these needs with on-going staff development but a willingness to experiment with new tools and practices and adapt one’s practice from the lecturer’s side are also important. The pedagogical and technical skills are often interspersed; this is evident from the fact they are addressed jointly as part of the staff training programmes of some institutions.

In almost half the cases – 13 out of 27 – TEL was reported to be the focus of one of the modules of the Postgraduate Certificate in Learning and Teaching in HE. Similar was the case among the interviewees, as four out of seven mentioned that TEL was included as a separate module in that course. The PGCERT/PGCAP course is critical for new lecturers’ professional development (Donnelly, 2006; Matthews & Jessel, 2006; Schon 1987) and it is important that TEL practice is embedded in that course so that lecturers understand that TEL is part of their standard practice. The way institutions embed TEL in their PGCERT/PGCAP courses has not been standardised as yet; some have a whole module on TEL while others embed TEL in the whole course. A combination of the two, looking at TEL explicitly as part of the curriculum and also embedding TEL practice in the way the course is delivered and assessed may be the golden mean as this will offer the opportunity to new lecturers to study and discuss TEL’s potential but also reflect on their own experiences of using it as part of the PGCERT/PGCAP course.

Most institutions that participated in the survey provided a wide range of CPD opportunities around TEL. This is crucial for those who are already midway through their career as well as anyone who would need some development in the area of TEL. The need for all lecturers to be competent in the use of TEL is apparent and highlighted by the UK Professional Standards Framework which is devised by the Higher Education Academy (HEA, 2012) and sets the professional standards for teaching and supporting learning within HE. This is indicative of the fact that the use of learning technology to support, facilitate and enhance students’ learning has now become standard practice and is no longer seen as a separate skill, as discussed more extensively in the literature review chapter.

3.2 Drivers for institutional TEL-support implementation

The ‘student experience’ seems to be the most critical stated drive for the implementation of TEL across participating institutions. All other goals and targets around TEL, such as e-submission and e-assessment, developing staff competencies across the board and improving uptake, are a means to achieve an improved student experience and to raise levels of student satisfaction. This could be the result of the raised tuition fees and the increased competition among the UK HEIs for a shrinking student body (Ratcliffe, 2012; Taylor 2013). While raising students’ satisfaction is a reasonable target, there is a danger that TEL might be utilised mainly for administrative tasks that simplify the learning and teaching processes, missing out on its transformative potential to redesign the curriculum (Palloff & Pratt, 2007). The fact that TEL was used more for its administrative benefits rather than to its potential to transform learning was explicitly stated by two informants and was implied in the responses of some of the other informants too.

3.3 The question of prerequisites in terms of staff development for blended and online learning course delivery

Although in more than half of the cases there were no strict requirements for staff to undertake training/development before they got involved in blended learning, training opportunities were available and staff were strongly encouraged to participate; a few of the participants mentioned that for online courses in particular, staff would be expected to participate in some TEL-related personal development and also that staff development needs would have to be addressed during the course validation process. In one third of the cases there were some requirements that varied from a half-day VLE induction to a whole module, while in other cases staff development on TEL was tied in the course approval process. There was an interesting debate on whether there should be any prerequisites before teaching online or not; in order to teach online successfully, one needs to not only be knowledgeable in their subject and have some pedagogical awareness of current teaching and learning theories, but needs to have experience of online learning and follow an explicit learning design in the delivery of their module. The question of prerequisites seems to be a double-edged sword; on the one side, putting prerequisites may slow down and even prohibit innovation as it would create an extra level of scrutiny and on the other without prerequisites there is a risk that the course may not be up to the highest standards. In other words, if TEL and one's ability to teach online or in a blended course is seen as something additional to a tutor's responsibilities, this fact might limit the wide adoption of blended and online courses in some cases. At the same time, in order for such courses to be delivered effectively, all participating tutors need to have an understanding of technology and the way it intersects with their subject matter and with pedagogy too. This is in accordance with the Technological Pedagogical Content Knowledge (TPCK) concept which emphasises the interactions, affordances and limitations among content, pedagogy and technology:

Quality teaching requires developing a nuanced understanding of the complex relationships between technology, content and pedagogy, and using this understanding to develop appropriate context-specific strategies and representations (Mishra and Koehler, 2006, p.1029).

Although the TPCK model was not discussed or mentioned by the research participants, they underlined the importance of all its elements; according to research participants, in order to deliver blended and online courses effectively, lecturers need to have some pedagogical knowledge on top of their subject matter expertise, need to be aware of learning design, online moderation and facilitation and to have good time management skills, attributes that are also congruent with some of the current literature on the subject (Garrison & Vaughan, 2008; MacDonald, 2008; Palloff & Pratt, 2007; Salmon, 2003 & 2011).

Furthermore, evidence from this research indicates that lecturers need to be digitally literate, have a conceptual understanding of the tools they are using and make the conceptual shift from content creation to interactive online facilitation. According to research participants, depending on the subject of the blended or fully online courses, they are often founded around constructivism and social constructivism, or problem-based learning and portfolio evidence. However, there are still some courses that follow a 'pragmatic' approach without an explicit learning theory or model behind their design. This, according to some research participants, seems to be an issue not exclusively related to blended and online courses as the lack of pedagogical underpinning could be evident in campus-based courses too, but as blended/online courses are mostly recorded on the web, it becomes more apparent in those.

Some HeLs participating in the research are in favour of online collaborative learning, while they perceive that many academic staff are still following the old instructional paradigm which focuses on content delivery and when they move to online environments, they tend to replicate that.

3.4 Perceptions on the quality of online learning

In terms of whether online learning was still seen as second best, there was a distinction between blended and online learning; while the use of technology in a blended way was seen as part and parcel of the student experience and as an extension of their learning rather than second best, purely online learning was sometimes seen as second best by academic staff. This, however, was attributed to a lack of understanding of the affordances of various technologies by those who made such claims and was reportedly beginning to change.

3.5 Online learning and its perceived impact on the teaching profession

In terms of online learning being accused of de-skilling the teaching profession leading to an 'automated' education with the aim to cut costs, this was reportedly not a strong argument any longer; it was only claimed to be shared by senior academic staff who feel threatened by the introduction of new technologies and based on the misconception that technology would replace lecturing staff. Most participants in the research argued that this model of 'automated' education would not work in HE, claiming that online learning is very skilful, time consuming and challenging and can lead to improved quality standards.

3.6 The thorny issue of cost of online learning

In terms of the pure cost of the online courses compared to their campus-based equivalents it seems that there is still a lot to be learned; according to research participants, it is very hard to generalise on the most expensive way of delivery as in most cases institutions do not follow a specific model due to the fact that their purely online provision is not very substantial. Furthermore, it appears that there are so many hidden costs involved in course delivery of both campus-based and online courses that complicate costs further. The only safe conclusion regarding this matter would be that online courses are more front-loaded as the course needs to be fully developed before it runs for the first time and that online courses are in no way a cheaper version of their face-to-face counterparts.

4 Conclusion – Recommendations

This study aimed to shed more light on the staff development activities currently on offer by HEIs in the UK in order to encapsulate information on both technical and pedagogical training in the area of TEL, as well as uses of examples of good practice in the form of case studies and CPD activities offered to academic staff in this area. The staff development needs of academic staff were positioned within the wider Higher Education context as TEL's successful implementation requires a coordinated institutional approach.

Most universities represented in the survey offered a wide variety of staff development sessions/events for their academic staff that covers a range of digital skills as well as pedagogical considerations of various learning technologies; this includes hands-on training sessions, seminars on the pedagogically effective use of various learning technologies, online case studies, peer support via internal workshops/ conferences and, in some cases, other CPD activities in the area of TEL such as e-moderating online short courses, Staff Educational Development Association (SEDA) certified e-facilitation courses and postgraduate modules. Staff development opportunities around various learning technologies in UK HEIs may well be pervasive across the sector if the same pattern as indicated by this study occurs in all other universities; the perceived potential of technology to enhance the students' experience in general and students' learning in particular has led to the adoption of a wide range of approaches to staff development in this particular area. What is more, TEL is seemingly recognised as sound pedagogic practice as it is embedded in the PGCERT/PGCAP course either as a module of study or as an integral part of the course.

It became evident from this research that HEIs state that effective online moderation and facilitation requires an explicit pedagogical understanding, the ability to structure online activities with clear objectives and specified assessment criteria. The tutors' online presence is very important so that students are guided through the online environment; furthermore, students need to be supported online from induction to completion and their progress should be monitored. Therefore, teaching staff need to dedicate appropriate time to the online environment. The facilitation of discursive/dialogic learning requires a pedagogical understanding of constructivism and social constructivism and the lecturers involved should ideally have some experience of online moderation and facilitation in order to be able to support their students effectively online. On the other hand, experiential learning with technology can be resource heavy and specialist support staff are often needed to create the bespoke environment and the resources. Blended and fully online courses require more systematic use of TEL by their very nature and an explicit curriculum design. Learning theories and online pedagogies would be better taught in seminars and in the PGCert/PGCAP course which is compulsory for all new lecturers in HE.

Regarding the tools used, a certain level of competence and confidence with the technology is needed as is a conceptual understanding of the tools they might use; tutors need to develop some digital skills in order to be able to use the institutional platforms such as the VLE and its various tools, the e-portfolio system and the

Turnitin system for plagiarism prevention and detection. Basic html skills in order for them to be able to work with text, links, images and videos are always useful. Knowledge of Web 2.0 tools such as blogs, wikis and forums are also critical as they can enhance students' learning through reflection, co-operation and collaboration. These skills, coupled with an ability to use e-assessment and e-feedback tools can empower tutors of the digital age to enhance the student experience. These skills can be acquired in a number of ways, such as training sessions, workshops, case studies, peer support and other CPD activities offered by most HE institutions. As pointed out by some HeLs, although knowing how to use the VLE and basic ICT literacy are important, there is an overlap between the pedagogical knowledge and digital skills required for using TEL effectively.

It became apparent that TEL's successful implementation by HEIs requires a coordinated institutional approach and a long-term investment; while there is evidence that TEL becomes part and parcel of the teaching and learning practice, it still takes time and effort and this conflicts with other aspects of university practice such as research, face-to-face teaching and student support as well as other administrative tasks that often overload the lecturers' schedule. What is often lacking is a top-down approach to TEL-support implementation and a vision from senior management on ways TEL support can enhance and transform the student experience, according to some HeLs. This is critically important as it can rationalise an institution's approach to TEL support and make TEL's adoption consistent and widespread, avoiding existing contradictions, such as lack of incentives for TEL adoption, lack of time allowance and other rewards for embedding TEL in the curriculum.

A coordinated institutional approach would therefore require strategic buy-in from senior management and a vision around TEL, opportunities for staff development and incentives to teaching staff to develop themselves in this area and utilise TEL more in their teaching. These incentives may include some time allocation as lack of time is the most common reason behind staff's reluctance towards implementing TEL. Furthermore, for sustainable delivery of heavily blended and distance learning courses, costing models need to be looked at by the institution. Costing models need to include fixed and varied costs that are dependent on the discipline, delivery approach and resultant staff time required, but also on whether bespoke content needs to be developed or not. It became apparent from this research that more needs to be done in order to understand the real costs of online learning and that this is crucial for its sustainability.

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