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Developing a technology enhanced learning framework to gain a snapshot of institutional successes and challenges

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Across higher education, institutions continue to invest in technology enhanced learning (TEL) as it has the potential to transform and improve the quality of learning, teaching and the student experience. Despite the investment, many still struggle to identify and address the elements that are essential to enabling institutional success. This paper focuses on the iterative development of a TEL Framework that aims to provide a fast and efficient snapshot of institutional challenges and successes in TEL, alongside a set of actionable recommendations to move the institution forward.

The Framework is based on a set of 8 themes the authors have identified as critical to the success of TEL. The themes are used as part of dialogic process, designed to gather perspectives on how TEL is being used across an institution. By June 2017, the TEL Framework was trialled in 6 institutions. Using a workshop format, participants engaged in a three-step guided process known as DIP – Discover, Interpret and Pitch. At the core of this process were cards that represented the 8 TEL theme. These were used to surface participant's perceptions. Overall, most participants agreed, that the TEL Framework was a valuable process to use to uncover institutional successes and challenges in TEL and that the theme cards were useful in stimulating these insights.

The TEL Framework is still a work in progress and so its effectiveness is still being determined. However, early indications are that it is a useful instrument for gathering perceptions, and in identifying TEL challenges and successes.

Introduction

There is a growing realisation that Technology enhanced learning (TEL) has the potential to transform and improve the quality of learning, teaching and the student experience (Walker et al. 2016; Marshall, 2010). Additionally, when done well, TEL can help institutions access new student markets especially via online learning. Together, these factors have weighted the priority of TEL more heavily than in the past. While higher education institutions continue to invest in TEL, many still struggle to identify and to address the essential elements that enable institutional success. This paper focuses on the development of a TEL Framework that aims to provide a fast and efficient institutional snapshot of institutional challenges and successes in TEL alongside a set of actionable recommendations for institutions to respond to challenges in a focused way.

The motivation to develop the TEL Framework was to enable institutions to identify areas where they need to

focus to address influential challenges and others where they can celebrate their successes to celebrate and disseminate these across and beyond their own institutions. The discovery process, uses conversational and deep listening approaches, to gather different perspectives on key elements that influence the success of TEL and Return) especially in terms of academics and students themselves. The Framework itself is based on a set of 8 themes that we believe are essential to the success of TEL. The themes are represented through a set of theme cards that form the basis of a largely dialogic and scaffolded discovery process during a 90-120 minute workshop. The decision to adopt a dialogical method was based on previous experiences using the Assessment and Feedback cards developed as part of the JISC Viewpoints Project (<http://wiki.ulster.ac.uk/display/VPR/Home>). The Assessment and Feedback cards trigger powerful conversations and enable participants to easily construct, visualise and share ideas. They also encourage interaction, participation in important conversations about learning and teaching (Nicol, 2012).



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These days a growing focus on quantitative user activity and usage data often excludes important perspectives that represent ‘people’ and ‘culture’. Arguably, hard data offers credible evidence however failure to surface and then address cultural assumptions, beliefs and local pedagogical contexts can hamper institutional transformation. After all, cultural frameworks exist within all organisations. They influence how people enact their practices, interpret their views, share assumptions and express their identity (Tierney, 1999) even in relation to TEL. Equally, the local pedagogical context represents ‘the relationship between a setting and how participants interpret that setting, including the meaning of practices’ (Moschkovich & Brenner 2000, p.463). For these reasons, the TEL Framework was designed to surface a range of perspectives that encompass participants’ cultural and pedagogical contexts.

At the time of writing, the work on the TEL Framework was a work-in-progress that was evolving through an iterative development process. Adaptions are made based on lessons learnt through implementing the framework in varying institutional contexts. These lessons are based on our own experiences, participant responses and feedback. This paper elaborates on the development process, peer input and discussion that are informing improvements in the TEL Framework. The paper also outlines why these themes are key to TEL, describes and justifies the dialogic process, and presents the participant feedback gathered so far.

Development of the TEL framework

The TEL Framework relies on eight themes that are intended to surface different, and sometimes contrasting, institutional perspectives on TEL successes and challenges. A TEL Discovery Workshop was developed that uses cards that represent these themes and scaffolds interaction, reflection and discussion using a dialogic method. In this way, the workshop is a critical mechanism for gathering individual and collective perspectives on TEL. The perspectives gathered from the workshop are analysed to produce an institutional snapshot and set of recommendations to assist the institution in addressing the challenges that arise. Together the theme cards, the workshop process and the report are interrelated components of the overall TEL Framework.

Prototyping and initial iterations

In late 2016, the first prototype was implemented in 3 workshops using 7 TEL themes in New Zealand. Prototyping proved to be an effective way to test the themes as the initial part of the TEL Framework. Learning from observations made during these workshops alongside verbal feedback received afterwards, the development of the themes was iterated. Some of the key areas addressed included wording, number of themes, guiding statements, the type of scales used, and the

layout and visual design of the cards. The length and format of the workshop was also considered. Subsequently, and with input from peers across Australia, New Zealand and internationally, eight themes were derived to carry through to the first iterations of the TEL Framework and workshops.

TEL framework themes

At the time of writing, an additional theme, making a total of 8 interrelated themes were used in the TEL Framework. There were ‘strategy’, ‘Technologies’, ‘Functionality’, ‘Usability’, ‘Learning design’, ‘Academic Adoption’, ‘Learner Impact’ and ‘Assessment and Feedback’ (see Figure 1). This section provides a short justification for each theme.

 <p>Strategy The institution has drivers in place to motivate and influence technology enhanced learning</p>	 <p>Learning Design The technology enables pedagogically sound learning designs to be easily created and replicated</p>
 <p>Technologies The combination of technologies are robust and reliable and meet the learning needs of the institution</p>	 <p>Academic Adoption Academics are aware of how to use the technology to enrich the learner's experience</p>
 <p>Functionality The technology affordances support and enhance teaching and learning activities</p>	 <p>Learner Impact Learners are engaged in high quality technology enhanced learning experiences</p>
 <p>Usability The technology is simple to use, easy to navigate and has a consistent look and feel</p>	 <p>Assessment & Feedback The technology capabilities are fully utilised to support the assessment and feedback process</p>

Figure 1: The 8 themes used in the TEL Framework

Strategy was deemed as critically important as Higher education institutions without a clearly defined Institutional strategy for TEL lack a clear vision for what they want to achieve and thus find it difficult to influence TEL and determine its effectiveness (Graham, Woodfield & Harrison 2013). Related to a TEL strategy, institutions need to ensure they have the right *combination of technologies* and that these provide the *functionality* and *usability* required to enable users to enact their pedagogical goals and vision (Chowdhry, Sieler & Alwis, 2014; Graham, Woodfield & Harrison 2013). Furthermore, the technologies must provide the pedagogical affordances required to enable different *learning designs*. Of course, the *adoption* of technologies by academics is essential to TEL. However academic adoption is dependent on internal and external factors. External factors include support, training and professional learning experiences. Teachers also need to be aware of how the technologies available can be used, particularly when designing courses to enhance learning and the learner experience (Chowdhry, Sieler & Alwis, 2014; Demian & Morrice, 2012). Adequate supports too, need to be in place to influence academic and learner adoption levels to fully utilised to enhance and improve the learning experience of students (Kirkwood & Price, 2014; Demian & Morrice, 2012). Steel (2013) found that teachers’ pedagogical context was another highly influential factor in shaping teachers’ technology experiences and pedagogical application of technologies. Internal factors

include teacher beliefs, their pedagogical preferences and their internal reasoning and decision-making. The *Learner impact* is another critical aspect of TEL. For technologies to have a positive impact, learners need to be supported and aware of how to use the technologies. Equally, institutions need to gather and respond to student feedback on satisfaction and quality of use of TEL. Understanding learner engagement in the TEL environment can work to ensure TEL has a positive impact on the student learning experience (Chowdhry, Sieler & Alwis, 2014). Finally, the use of TEL in *Assessment and Feedback* is critical in terms of shaping and influencing student learning, making judgements about the standards of student work and certifying learning (Boud, 2010). In the context of TEL, technologies can also assist teachers with efficient administrative workflows around grading and marking.

The 8 theme cards have a similar visual design represented by a specific colour and icon. On the front of the card is the theme, a brief description and key question to be considered to help participants become familiar with the theme. On the back of the card (see example in Figure 2), guiding statements are provided to encourage deeper individual and collective reflection and discussion around institutional successes and challenges. There is space for individual comments and a square box to make an overall individual judgement on whether the theme is an overall success or challenge. In this way, these 8 theme cards have been developed to scaffold each theme to trigger discussion, reflection and a prioritisation process.

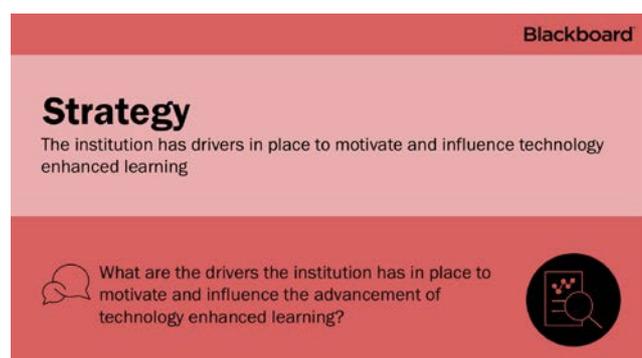


Figure 2: Front and back view of strategy theme card

The TEL Discovery Workshop involves a 90-120 minute face-to-face process with two facilitators. The workshop is a key element of the TEL Framework. It provides an opportunity for educational institutions to listen to participants' individual and collective reflections and perceptions of successes and challenges around TEL. The 8 theme cards scaffold a three-step dialogic process (Figure 3). The acronym DIP (Discover, Interpret, Pitch), represents the steps in the process. First cards are introduced so that individuals become familiar with the themes. Next, one-by-one, guiding statements on each card are used to stimulate individual written responses

via scales and comments (on the back of the card). These are shared in group conversations that help participants delve deeper into interpreting the themes. Finally, once all 8 themes have been considered, groups must build consensus on their successes and challenges and develop a pitch around their number one institutional challenge and success. Individual and group perceptions are gathered through individual responses to scales, comments, and a structured justification used in their pitches. After the workshop, perceptions are analysed to form a short report that documents the institutional successes and challenges and offers a set of actionable recommendations to move TEL forward in the institution.

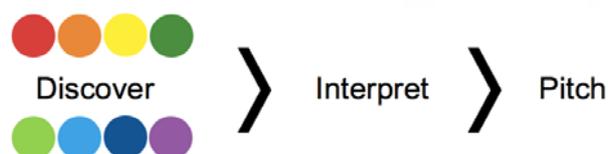


Figure 3: The three-step process of the TEL Workshop

The approach used to deliver the TEL Framework is time efficient for institutions and provides a valuable snapshot of what is occurring across the institution. The value of gathering different perspectives on these themes is the potential to locate insights from different institutional and cultural perspectives (e.g. leadership, students, academics in different disciplines, central learning and teaching areas, etc.), to see how challenges can be addressed and successes can be celebrated and disseminated.

Of course, there are a number of ways to 'take the institutional pulse' in terms of institutional TEL. Benchmarking is one method that is commonly accepted and encouraged these days (ACODE, 2014). However benchmarking processes can be quite time consuming and resource intensive. While benchmarking is most certainly important and based on hard evidence, the TEL Framework design offers a more agile process that can be used to quickly to identify the challenges, successes and recommendations needed for immediate action. Responsiveness is key when, in Australia, government organisations like TEQSA demand that "TEL delivers high quality education, positive student experiences and credible qualifications, in the same way as other modes of delivery and participation." (TEQSA, 2016, p.2)

Piloting the framework

At the time of writing, the TEL Framework has been delivered 7 times in 6 institutions across Australia and New Zealand, with another 5 workshops confirmed in the Asia Pacific region (not including the initial 3 pilots). While most of these have been delivered as face-to-face activities, in 2 instances, participants have participated via video conferencing. To actively gain more feedback to inform future iterations, feedback forms, containing 3 questions were distributed at the end of for the last 3 workshops (all participants responded). When asked if the

TEL Framework was a valuable process to use to uncover the successes and challenges in TEL across the institution, 62% agreed, some strongly (see Table 1). Participants found the process to be very illuminating, enjoyable and informative because it provided an opportunity to compare notes with the different groups that were involved, although some would have liked students to be involved. Participants also thought the card system was great and the themes used were comprehensive. For example, one participant commented on the experience as “A unique approach to gathering data. Encouraged interaction and thinking.”

Table 1: Feedback responses (n=42)

Question	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
The TEL Framework was a valuable process to use to uncover the successes and challenges in TEL across the institution	1	4	11	17	9
The theme cards were useful in stimulating insights into these successes and challenges	0	2	4	19	17

When asked if the theme cards were useful in stimulating insights into these successes and challenges, 86% agreed, 40% strongly (see Table 1). Participants felt the cards worked well to structure the session and keep participants focussed so they could use the opportunity to voice their concerns and suggestions. One participant remarked “This was an extremely useful instrument and the themes were appropriately considered”. Finally, when we asked how the workshop could be improved, some participants felt that more explanation about the themes could be provided as well refining some of the wording used in the guiding statements to ensure immediacy of understanding. While many felt, the workshop component was well structured and time efficient, one or two others thought an online process would help efficiencies and a few, who participated via video conferencing, felt the medium lessened the experience. The authors are reviewing all this feedback and using it to develop the next iteration.

Next steps

Since the initial prototyping, significant progress in the development of the TEL Framework has been made but it is still a work in progress. Consequently, its effectiveness is still being determined. However, early indications are that it is a useful instrument for gathering perceptions and sharing concerns/successes about TEL with others. Institutional reports from each TEL Framework activity were in production at the time of writing. Feedback from

each workshop sponsor will also be sought to determine the value of the Framework and process. While the theme cards were useful in stimulating insights into these successes and challenges, there is still a need to determine whether the TEL Framework is useful in helping drive institutional change. Subsequent work and feedback will be presented at the ASCILITE 2017 conference.

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