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Embedding a Blended Learning Approach From First Year

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Introducing a Blended Learning Approach from First Year

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Introduction

As DIT strives to enhance the transition of students into third level education, a number of priority areas were identified as part of the ongoing STEER (Student Transition, Expectations, Engagement, Retention) initiative. Two areas related to blended learning were recognised as crucial to the initiative and the overall transition experience, firstly, to enable students to become self-directed learners and secondly, to ensure students are cognisant of blended learning as an effective pedagogy (O'Grady, 2015). However, it is not without risk to assume that first year students have a natural affinity with blended approaches, as Garrison and Vaughan (as cited in Moore & Gilmartin, 2010, p.4) opined "those who have grown up with interactive technology are not always comfortable with the information transmission approach of large lectures. Students expect a relevant and engaging learning experience". Therefore, it is incumbent on the institute to provide a staged, progressive introduction to blended learning to inculcate in the students an appreciation of the benefits of such approaches. The purpose of our project is to provide a rationale for redesigning a module for blended delivery and how blended learning can be implemented, with specific focus on first year undergraduate modules. It is hoped that this report can help address current challenges in the application of blended learning, and also make a definite contribution to the laudable STEER goals.

This report will initially consider the background to blended learning and the challenges associated with the approach, before exploring the practical implications of introducing blended learning to early stage students in a staged fashion.

Background and benefits of blended learning

Blended learning has been described as "the combination of traditional face-to-face teaching methods with authentic online learning activities" (Davies & Fill 2007, p. 817). Whilst myriad definitions of blended learning abound in the literature, Graham succinctly describes these learning systems as those that "combine face-to-face instruction with computer-mediated instruction" (Graham, 2006, p.5). Therefore, at its core, blended learning includes both supervised "bricks and mortar" attendance, and an online component, all of which are designed to deliver an integrated learning experience. It has been argued that the development of blended learning does not necessitate the creation of a new paradigm of education. Nicols (2003) contends that blended modules draw on the same theoretical principles that belong to face-to-face and e-learning modules. As a result, he sees blended learning as a new genus as opposed to a new species that is a result of evolution due to technological changes. Using this principle, blended learning can be viewed as a means of education as opposed to a mode of education. That is to say, blended learning involves the use of various technological tools that can be applied in various educational contexts.

Considering the technological advances in the last number of decades, the nature and scope of online instruction has radically altered with the result that there are now concerted national efforts to embed and expand blended learning methodologies, at both second and third level. The National Strategy for Higher Education to 2030 recognised blended learning as an important tool by which the flexibility of provision of teaching and learning in the tertiary education sector may be enhanced (Department of Education and Skills, 2011), while the continued expansion of technology enhanced learning within schools, is set out in the Digital Strategy for Schools 2015-2020 (Department of Education and Skills, 2015). The current ubiquity of blended learning within third level institutes is such that "every new tertiary teacher must be prepared to design and teach subjects and programs that will be totally or partially online" (Allen & Seaman 2010 as cited by Reeves & Reeves, 2013, p. 112). Given these trends, it appears incumbent on educational institutes to take advantage of the opportunities which blended learning offers.

These opportunities include facilitation of more diverse groups of students (Sharpe, Benfield, Roberts & Francis, 2006) and better use of diminishing teaching resources (Twigg, 2003). Higher levels of student engagement can also be achieved by adopting a blended approach (Huang & Lin, 2011; Garrison & Kanuka, 2004). One of the most significant opportunities of blended learning may be observed as a shift in how the stages of Bloom's taxonomy (Figure 1) are attained by the students (Tolks et al., 2016). If the students attend class having accomplished the lower stages by reading pre-supplied lecture notes etc., they can be facilitated by the lecturer to achieve the higher more difficult stages of Bloom's taxonomy during their face-to-face interactions. Blended learning may be used to harness and exploit useful and functional facets within each of the two teaching approaches; face to face discussions can be "spontaneous, can create energy and enthusiasm, build relationships, and cultivate a sense of community in the classroom" (Ayala, 2009, p.280), whilst internet based discussions allow "scheduling flexibility, promote interactivity, and foster community building…., as such, discussions are often more thoughtful, reasoned, and supported by evidential sources" (Ayala, 2009, p.280). The use of a blended approach can act to enhance and augment face-to-face discourse by providing literature and discussion points ahead of any interactions, thereby enhancing the depth and richness of exchanges.

The efficacy of blended learning approaches is well supported in the literature. The United States Department of Education performed a meta-analysis to assess the effectiveness of traditional, online and blended learning (U.S. Department of Education, 2009). In general, they found blended learning was more effective than traditional teaching alone. They suggested that use of teaching tools which are commonly found in blended learning environments such as video or online quizzes, did not enhance the effectiveness of the teaching. Instead they found the learning was enhanced by the student's ability to spend more time with the material and engage in more reflective learning. Therefore, the careful and strategic management of the delivered material i.e. knowledge management, is a crucial component of blended approaches.
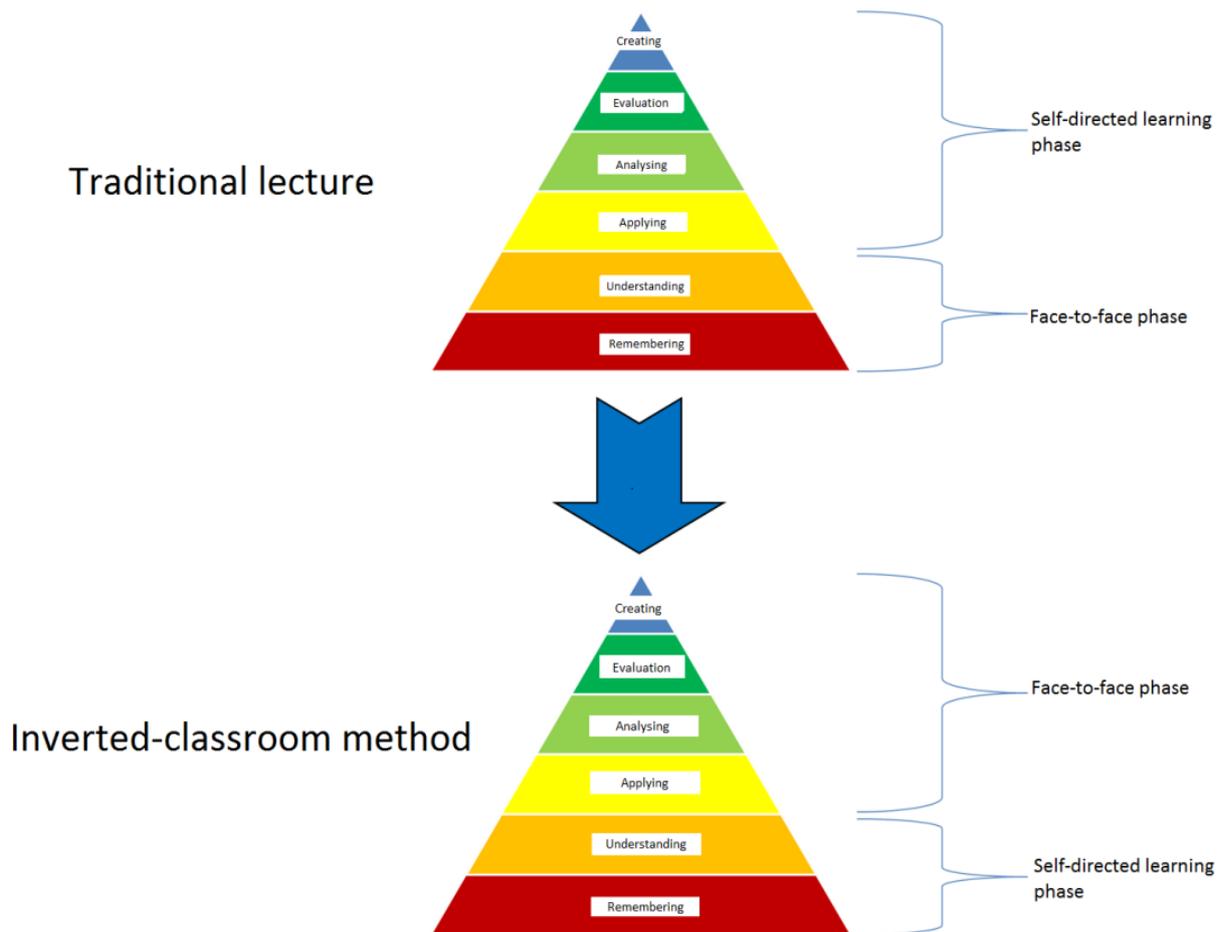
Figure 1 Blended Learning Approach and Bloom's Taxonomy (Tolks et al., 2016)

Over the past number of years, academic attention has focused on the importance of knowledge management in corporate and academic learning environments (Chatti, Klamma, Jarke & Naeve, 2007). Knowledge management includes knowledge sharing, creation, validation, presentation, distribution and application (Yeh, Huang & Yeh, 2011). Previous research has shown that a blended learning approach serves to improve student knowledge transformation (Jou, Lin & Wu, 2016), knowledge gain (Milic et al., 2016) and knowledge co-creation (Bridges, 2009). One of the key advantages of blended learning is that it can be used as an instructional approach for knowledge creation (Graham, 2006). It has been argued that knowledge is socially constructed and that online communities are valuable conduits for leveraging the learning and knowledge process (Chatti et al., 2007). Indeed, it has been convincingly argued that in order to succeed, learning models have to recognise the social construction of knowledge and therefore place an emphasis on networking and community

building in order to maximise the knowledge creation process (Chatti et al., 2007). There are a number of different ways that blended learning can facilitate new knowledge development. Bonk, Kim and Zeng (2006) recommend inviting experts to online classrooms, the benefits of which were articulated by students as: bringing internationality into the classroom, combining asynchronous and synchronous online interactions, promoting anchored learning, integrating online activities in final assessment and reducing face-to-face classroom time.

Challenges associated with blended learning
While there are significant positives to be found when implementing a blended approach there can also be challenges. The success of a blended learning approach is dependent on a number of factors including, but not limited to, students' perception of blended learning and their expectations, the technological resources of the school, and the skill of the lecturer in delivering learning through technology and integrating online and face-to-face elements.

A student's approach to learning is greatly influenced by their initial learning experiences (Baeten, 2010; O'Neill & McMahon, 2005); hence a first year undergraduate student who has predominantly experienced a teacher-centred class based approach at primary and secondary level may struggle with alternative approaches such as blended learning. They may have difficulty with taking personal responsibility for their learning and may have skewed expectations, e.g. that work to be completed outside of class time is not of equal merit and that a low volume of face-to-face class time means a subject is of less importance (Vaughan, 2007). Students may also struggle to engage with the technology used to deliver blended learning. Research has demonstrated that technology driven approaches, without adequate consideration of learner needs and expectations, are limited in their effectiveness (Vaughan, 2007; Harris, Connolly & Feeney, 2009).

A significant challenge facing blended learning is the maintenance of the social aspect of learning during online elements. From the student perspective, they report an online learning environment can be isolating (Smyth, 2012) and from a pedagogical point of view, it can be antagonistic to the social constructivist approach to learning which promotes learning

through social interaction (Cooperstein & Kocevar-Weidinger, 2004). Careful consideration needs to be given to the development of the online classroom community to encourage co-construction of knowledge during online elements.

Blended learning implementation can be viewed as extremely demanding of teaching staff, requiring considerable skill alongside adequate technological resources. In addition to enhanced IT skills for online material development, further training may be needed to address other challenges that blended learning brings, such as managing the nuances of communication without face-to-face interaction and successfully marrying the online and face-to-face components of a course. Design and implementation of blended learning also requires a significant time commitment. This includes time for staff training, time for material development, and crucially, time for evaluation of effectiveness and end-user perceptions (Harris et al., 2009).

Considerations for Introducing Blended Learning into a First Year Curriculum

Transitioning from school to college is a difficult process for first year college students. Care must be taken to consider the degree to which a first year module can be transferred to a blended learning approach and the steps that can be taken to ensure students are prepared for the transition. In addition, lecturers must be sufficiently prepared to deliver a blended learning approach using appropriate resources. The broad functions that blended learning can serve and how it can be incrementally introduced in a first-year setting are detailed below.

Blended Learning for Effective Information Distribution

One significant advantage of blended delivery is the ease with which students can access course content. When questioned 95% of first year students in sport sciences either agreed or strongly agreed that the online elements of their course were a good source of information (Testa, 2011). They felt the virtual learning system helped "with revision", allowed "easy access to lecture notes" and provided "information about the module, cancelled lectures and other changes" among other benefits (Testa, 2011, p. 16). Hall and Villareal (2015) also found that students saw significant advantages in access to content within a blended environment.

The students felt that the online environment allowed improved access to materials, assignments and grades. They also felt it improved communication with the lecturer as they were more aware of any changes that took place. This mirrored the experience of the students observed by Testa (2011). The only difficulties found by Hall and Villareal related to technical difficulties which could cause significant frustration. Allied to these technical difficulties is the potential issue of internet access (Mwakyusa & Mwalyagile, 2016). Therefore, when considering blended delivery as an approach, it should be ensured that both adequate IT infrastructure and technical support is available to students.

Blended Learning as an Efficient Method for Class Management
Given the considerable expansion in cohort numbers, and the move towards common entry first year classes, the academic administration of these large groups can significantly benefit from blended learning approaches. Within the Dublin Institute of Technology (DIT), the use of the Webcourses virtual learning environment (VLE) provides a platform whereby such methodologies can be readily implemented. The VLE can provide a number of important efficiencies with respect to the provision and quality of student feedback. Review studies by Hattie and Timperley (2007) have indicated that students benefit greatly from feedback if the volume and quality is sufficient, and it is provided in a timely manner. The VLE allows for the submission of assignments electronically to a central repository negating the need for hard copies. Due to the widespread availability of mobile devices, this yields significant flexibility to lecturers with regard to the grading and annotation of submitted material, and to learners in terms of the time and place of assignment submission. The VLEs also allow lecturers to effectively track submission times, as well as offering the facility of plagiarism detection. The VLE provides for clarity of feedback since it removes ambiguities arising from illegible handwriting, and also offers efficiencies to lecturers with respect to the formulation of feedback, as it can be stored and reused as appropriate. Research suggests that feedback is most effective when it is aligned to learning outcomes and assessment criteria (Nicol, 2009). Rubrics linked to assignments may be created within the VLEs which offer time savings to lecturers in terms of enhanced "workflow" when assessing material, as well as demonstrating the relevant learning and assessment criteria to students (van der Hulst, van Boxel & Meeder, 2014).

Blended Learning for Encouraging Student Interaction

Interaction within blended learning models can be taken to mean student-student interaction, student-teacher interaction or student-content interaction (Gilbert & Moore, 1998). Consideration on how best to support each of these interactions is important for enhancing blended learning delivery.

Prohorets and Plekhanova (2015) classify interactions in a blended learning approach as being low, intermediate or high intensity. At low intensity, students engage with online course material but do not interact with each other online and the work may or may not be under teacher guidance. Examples of low intensity activities include watching online material, completing online exercises or creating a wiki (all achievable via the Webcourses VLE). At this low-level intensity, there is little focus on human interaction within online elements however it may serve as a starting point for introducing first year students to online learning platforms.

At an intermediate level, social elements are incorporated into virtual components. Students may engage with the material at different times but there is an emphasis on group participation and students are encouraged to express their views. The lecturer monitors online activity and provides feedback. Having initially established a basic level of online activity with the students, an intermediate level of interaction could be encouraged via activities such as discussion forums or blogs with input from students and lecturers. Webcourses can host such forums and free platforms such as Wordpress can support blogging. In the first-year setting, an accessible topic with low stakes marking may be most appropriate when introducing the concept.

At the highest level of interaction intensity, there is immediate communication within the virtual space, with students engaging with material at the same time. High intensity interaction can be achieved through tools such as Blackboard Collaborate which include video, audio and instant messaging functions. Google also supports a number of collaborative learning platforms for free. These can be used for activities such as online tutorials, group student presentations or project collaboration forums (Prohorets & Plekhanova, 2015). This level of engagement requires the lecturer to have a reasonably high level of fluency with online learning technology. The Learning, Teaching and Technology Centre (LTTC) within DIT offer training to staff in utilisation of such tools. It should be noted that this higher level of engagement may not be achieved within first year, but establishing a level of familiarity with

blended learning delivery in first year may act to scaffold a broadening of the scope and intensity of interactions in later stages.

Conclusion

Given the national efforts to broaden the delivery of blended learning, coupled with the necessity to produce time efficiencies for lecturing staff, the introduction and expansion of blended learning approaches now appears inevitable. The advances in mobile technology mean that the introduction of blended learning is now only limited by internal institutional attitudes, rather than external connectivity concerns. It is hoped that this report provides an overview of the relevant benefits and potential pitfalls when adopting these new approaches, with a particular focus on first year students and the particular challenges these cohorts present. By outlining some beneficial facets of blended learning, along with providing details of the relevant institutional resources available to support them, it is envisaged that this report might act as a catalyst for the increased utilisation of blended learning strategies within DIT.

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