REFLECTIONS ON PRACTICE

USE OF PRE-CLASS VIDEO LEARNING RESOURCES IN A BLENDED LEARNING ECONOMICS MODULE

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ABSTRACT

Blended learning (BL) combines face-to-face and technology-mediated instruction to create a variety of learning environments for enhancing students' learning. A common practice is the use of pre-class videos for students to learn the content materials prior to in-class learning activities. In this reflection, we examine how students, with different disciplinary backgrounds, make use of pre-class videos for learning content knowledge during a BL module, and their overall impression of BL, which was adopted as a teaching approach for a module at the Department of Economics in the Faculty of Arts and Social Sciences within the National University of Singapore. While students' perceptions of pre-class videos were generally positive, we argue that more could be done to address four pertinent challenges in the design of a BL environment—flexibility, interaction, learning processes, and affective support.

INTRODUCTION

Blended learning (BL) combines face-to-face and technology-mediated instruction to create a variety of learning environments for enhancing students' learning. Garrison and Vaughan (2008) define blended learning as "the thoughtful fusion of face-to-face and online learning experiences—a design approach whereby both types of learning are made better by the presence of the other" (p. 5). The growing importance of BL can be seen by the increasing popularity and adoption of this approach to instruction in higher education across the globe (Ross & Gage, 2006). A typical BL approach includes students carrying out pre-class learning activities such as watching videos which contain lecture materials before coming to class to engage in more guided discussion, collaborative learning, and other active learning activities. The availability of educational technology (e.g. use of an online learning management system) allows for pre-class learning or informal learning to be 'customised' to enable students to learn at their own time and pace. Such 'customised' learning also means that in-class time can be spent on deepening understanding through active teacher-student interactions rather than the delivery of content.

Challenges in the design of blended learning and flipped classrooms

In a recent review, Boelens, De Wever, and Voet (2017) identified four challenges in the design of blended learning—incorporating flexibility, stimulating interaction, facilitating students' learning process, and fostering an affective learning climate. These four challenges pose design concerns for BL, especially when student pre-class learning is seen as a complementary but crucial part of the learning process. Flexibility is envisaged as students' level of control over time, place, path, and pace of learning (Horn & Staker, 2014) and usually supported by the online component of BL during pre-class learning activities. Pre-class learning, with the use of online resources, creates an informal learning environment or space where social interaction and communication can become a challenge. More importantly, the monitoring of pre-class learning by instructors could pose a key problem, as they may find it difficult to know what students have actually learned on their own. Stimulating student-teacher interactions, both pre- and during class, are therefore seen as crucial by students and instructors in the BL environment (Graham, 2006). Students' learning processes are described as self-regulation skills required for the successful participation in BL environment. These skills may include planning, time management, and the use of technology to support learning. Developing students' learning processes require the use of specific strategies, such as orienting and planning, monitoring, adjusting, and evaluating (Vermunt & Verloop, 1999). An affective learning climate is recognised as important for promoting a sense of belonging and positive outcomes such as intrinsic motivation and wellbeing. Students in a BL environment could benefit from an affective learning climate through developing affective strategies—motivating, concentrating and exerting effort, attributing and judging oneself, appraising, and dealing with emotions. In the paper, we adopt these four challenges as a critical lens to help us unpack and reflect on students' use of pre-class videos as part of BL in supporting learning.

Online videos s a pre-class learning tool

A key aspect of BL design is the use of online content for pre-class learning, often in the form of short-duration videos. Students are instructed to watch online videos prior to attending classes, usually accompanied by short quizzes to test their own understanding of the content in the videos. Besides the ubiquitous video clips, video content can also be incorporated and shared through Web 2.0, which represents a collection of Web-based tools (e.g., wikis, blogs, instant messaging platforms, podcasts, YouTube, MySpace, and mashups) that offer a multitude of opportunities for online participation, collaboration, and communication (Sherer & Shea, 2011). Benefits of using videos for learning include stimulating interest and developing shared experience among students (Poonati & Amadia, 2010), promoting

comprehension and retention of information (Choi & Johnson, 2007), and enhancing critical thinking skills (Zipp, & Maher, 2010). For example, Hitch, Williams, Herbland, *et. al*. (2013) explored the impact and value of videos as a learning resource for a 3rd year undergraduate pharmacy module. Students responded positively to the video resources, and pointed out that the videos supported what they learnt in the practical sessions and were easily accessible online. In addition, the videos facilitated the ease for self-revision, allowed pre-practical preparation and created opportunities for repeated viewing and practice at the students' own time.

Despite the advantages of enhancing students' learning through videos, studies have shown that integrating videos into BL may not lead to positive learning outcomes. The downside of watching videos in isolation is that students may develop misconceptions, misinterpretations, or a lack of a deeper understanding of the content. Students also need to see the value in watching the videos and connecting the video content to instructional goals, without which this important phase of BL may end up as just another homework exercise (Choi & Johnson, 2007). A main concern in BL implementation is the transition from traditional classroom learning to one which requires students (and teachers) to adopt learner-centred methods and techniques, together with out-of-class independent learning and taking ownership of their own learning (Linder, 2017). In view of the 'disruptive' as well as 'transformative' potential of online technology (Garrison & Kanuka, 2004, p. 100), there is a greater need to prepare students by effectively training and orientating them to maximise the use of technology for both formal and informal learning (Boelens *et. al*., 2017). Students need to be provided with activities that will help motivate and encourage them to invest time and effort to watch and learn from the videos. Indeed, more research is needed to identify and understand ways in which students interact with video content and how their own prior knowledge or disciplinary background may influence their engagement with videos for BL. Collectively, review studies revealed that video lectures by themselves are unlikely to lead to better learning outcomes (DeLozier & Rhodes, 2017).

Blended learning economics module design

In the remaining sections of this paper, we reflect on the teaching of an economics module which adopted the BL approach. The economics module was offered to students in various faculties, including the Arts and Social Sciences, Engineering, Science, Business, and Law. In the course of teaching the module, video learning resources were employed to complement the face-to-face lectures. Prior to the weekly lecture, two videos were uploaded to the Integrated Virtual Learning Environment (IVLE), the University's learning management system, and students were required to review the videos before attending the lecture. During the lecture, the instructor would

leverage on the video resources which covered the fundamental principles and concepts relating to specific lecture topics. To reinforce student learning, questions were included in the tutorials for students to work out their own solutions which were subsequently presented in the tutorial classes. The questions served to foster student understanding of the fundamental concepts raised in the videos which were important for grasping the critical concepts underlying each topic.

THE FOUR CHALLENGES OF BL RE-VISITED

(a) Incorporating flexibility

While we observed that students' overall engagement with BL was high, more could be done to enhance the BL process. We noticed that students in FASS seem to have a lower impression of the blended learning approach compared to students in other faculties within NUS. As Choi and Johnson (2007) pointed out, students must appreciate the usefulness of watching videos in enhancing their learning in a blended learning environment. This suggests that it might be useful to redouble efforts in sharing and publicising the benefits and effectiveness of the blended learning approach in supporting student learning, particularly among the FASS students. Furthermore, students could benefit from greater flexibility through individual control over time, place, path and pace of learning (Horn & Staker, 2014; Merkt, Weigand, Heier, & Schwan, 2011; Zhang, Zhou, Briggs, & Nunamaker, 2006). The variation in observations for students from the Faculty of Arts and Social Sciences (FASS) and non-FASS students may imply the need to consider different groups of students in relation to their abilities or prior knowledge. This would help instructors decide how best to provide structure and guidance for specific groups of students while allowing more autonomy for other groups of students.

(b) Facilitating interaction

Students generally perceived pre-class videos as being useful for their own learning. However, while there is careful curation of content and progressive release of the videos, we realised that it would be helpful to monitor students in their pre-class learning process. As suggested by Schwarzenberg, Navon, Nussbaum, Perez-Sanagustin, and Caballero (2017), the level of pre-class preparation by students was a key determinant for benefiting from in-class active learning. Instructors need to overcome the challenge of providing meaningful interaction between students and instructor prior to the in-class activities. For example, in facilitating social interaction among the learners, an online discussion forum could be established to encourage students to

share their knowledge and discuss the challenges they face during the learning process. As Alonso, Lopez, Manrique, and Vines (2005) pointed out, instructors could encourage online communication among students to share information and foster peer learning.

(c) Facilitating students' learning processes

Importantly, while pre-class videos were generally perceived to be helpful in getting students to learn in a BL environment, there is perhaps a need for better instructional design to bring about deep cognitive processing while they engage with the video content (Mayer, 2013). Compared to students in other faculties, students in FASS did not seem to think that the videos would generate more interest in the module as the lecturers had observed. This suggests that it might be useful to provide explicit instructions on self-regulation strategies such as orienting and planning, monitoring, adjusting and evaluating (Vermunt & Verloop, 1999). These strategies not only help students to self-regulate when learning with videos, but also foster their help-seeking behaviour and agency to use the videos flexibly.

(d) Fostering an affective learning culture

The notions of motivation and other affective domains were not explicitly monitored in this module but from a design perspective, these are important considerations to ensure successful implementation of BL. The in-class learning activities could be designed to help students connect what they have learned in the videos, such as using a problem-based learning approach, which require students to work collaboratively to solve relevant and authentic problems. In addition, more attention should be focused on designing learning activities that take into account students' emotions, and on nurturing a learning environment that is open to failure and risk-taking. For instance, the in-class learning activities could also employ examples which are familiar to the learners (Carman, 2005). Instructors could also invite industry experts and leaders to share their experience and knowledge during face-to-face sessions with the students to highlight examples of economic concepts being applied to real-life scenarios, thereby emphasising the relevance of what they have learned in the module (Gedik, Kiraz, & Ozden, 2013).

CONCLUSION

We examined and reflected on the perceptions of students towards the use of pre-class video resources in a blended learning economics module. While their perception of the BL approach was generally positive, more needs to be done in the design of the BL curriculum by making a concerted effort to address the four challenges listed in the previous section. At the same time, more inquiry studies could also be undertaken to better understand students' actual use of pre-class video content in a BL environment.

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