Integration of Micro Lectures into the Blended Learning Discourse in Tertiary Education [#]

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Abstract

Over the past decades, the Internet has had a profound impact on tertiary education, with the emergence of a new format of distance education. With the broadband-connected World Wide Web, students can now pursue their learning, whether formal or informal, more comfortably and effectively. Also, the rapidly emerging technologies offer academics and educational institutions much greater choice in their instructional approaches and learning environments.

Micro lectures are considered to be one of the most effective modes in blended learning. This paper examines our practice of integrating micro lectures into our *English for Business* course, using an exploratory case study approach. The study focuses on four fields: learning content with technology; learning support services; learning management; and students' learning experiences. The findings indicate that the great majority of students were satisfied with micro lecture learning, and that the flipped classroom based on micro lecture learning resources can optimize the learning process. We believe that it is time to integrate micro lectures into formal learning in both online learning and face-to-face classroom teaching.

Key words: micro lecture, formal education, blended learning, tertiary education

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Introduction

Over recent decades, the Internet has had a major effect on tertiary education, with the emergence of a new format of distance education — the electronic delivery of programmes or courses. The broadband-connected World Wide Web allows students to learn with greater ease and effectiveness. Moreover, the rapid development of technologies offers academics and educational institutions 'new options that enable them to experiment with the most suitable mix of instructional approaches and learning environments' (Inoue, 2010). With the dynamic updating of learning resources on an ongoing basis and the facilitation of new types of interaction between students and teachers, digital technologies have overcome two of the challenges in traditional distance education (Guri-Rosenblit, 2010). The latest advance in information technology has greatly increased the popularity of cloud service based on cloud computing, which is particularly useful for distance education (Feng, 2010; Li, 2014). While both classroom-based and fully online instruction are well understood, it appears that mixing the two modalities poses challenges for some educational establishments, which appear to be struggling with conceptualizing and implementing blended learning.

However, it must be emphasized that, with considerations of cost, access, equity and learning culture, the majority of distance education institutions in Asia still make extensive use of the traditional technologies, such as printed study guides, printed textbooks and face-to-face tutorials (Latchem & Jung, 2010).

Micro lectures are considered to be one of the most effective and commonly adopted modes in blended learning. The concept of a 'micro lecture' was first proposed in 2008 by David Penrose, who called the micro lecture 'a knowledge burst', which could be used as a teaching resource embedded in a multitude of micro learning environments. However, Morris (2009) and Thomas (2009) assumed that the micro lecture concept was applicable in a networking course format.

Micro-lectures are becoming quite popular among educators, especially those with large lecture classes. Essentially, what it boils

down to is a video clip, about a minute or two in length, in which the instructor introduces a concept and summarizes the main points. This is in line with the concept of 'flipping' the classroom — changing the format of the classroom so that students complete their assignments in class with instructor support after watching the lecture at home (EDUCAUSE, 2012; Sweet, 2014; StudyMode, 2013; VanderMolen, 2013).

In this paper, we discuss our practice of integrating micro lectures into our *English for Business* course. This research adopts an exploratory case study approach. Within this framework, we describe and analyse issues concerning (1) the design of the short video clips and (2) the practice of integration with the course content, learning support services, learning management, and student learning experiences — and their impact on learning and teaching in the blended learning discourse in tertiary education.

Theoretical Underpinnings

Blended learning

Blended learning has become a part of our everyday understanding about the integration of high technology into teaching and learning scenarios. The term was coined by Paul Myers of the BBC College of Journalism in 2000. Of course, the term itself is just a label for certain types of learning delivery, and those practices had already been emerging for some time. Research findings (Bethel & Bernard, 2010; Inoue, 2010; Kuo, Belland, Schroder & Walker, 2014; Sun, 2014) have shown the impact of blended learning on student achievement, identified predictors of student engagement and illustrated correlates of student satisfaction with blended learning.

Blended learning refers essentially to a combination of different learning formats in a course (Li & Cheung, 2013), and it is recognized as the most effective way to cater for learner diversity in terms of learning styles (Li, 2014). The term is often used to label the approach that combines face-to-face instruction with computer-mediated instruction in a unique learning scenario (Bonk & Graham, 2006; Graham, 2005; Howard, Remenyi & Pap, 2006). Blended learning, as the dynamic mechanism to potentially facilitate dramatic changes in

the educational status quo, has good prospects for development (Sloan-C, 2007). The results of empirical studies carried out between 1996 and 2008 by the US Department of Education in higher education (2009) show that blended learning is a more effective way to learn than the traditional face-to-face teaching and online learning.

In blended learning, the web-based technologies are transferred to the face-to-face classroom to enhance interaction through student-centred activities (web-enhanced classrooms) or to enhance online education through classroom contact (classroom-enhanced online education) (Spiliotopoulos, 2011).

For designing successful blended learning courses, CILIP (2008) proposed the following four 'success factors' for academics to take into consideration: 'work with and within the context; use blended learning as a driver for transformative course redesign; help students develop their own conceptions of the learning process; and disseminate and communicate results of findings' (p. 3).

Micro lectures

With education being in need of more active learning environments in the Internet age, the micro lecture format seemingly offers great potential. The process not only empowers students with greater ownership of their learning, but the more open-ended nature of the follow-up materials gives them more opportunities for time variation (EDUCAUSE, 2012).

Micro lectures were introduced into formal educational programmes some years ago in China. Since then, the short video clip, focusing on specific points of knowledge, and using state-of-the-art design, has been made accessible on learning platforms, and is applicable in the blended and mobile learning format. The micro lecture has been discussed widely and accepted by both university academics and students (Hu, Huang & Li, 2013). The scholars and researchers in China concentrate chiefly on only two dimensions of micro lectures — (1) video resources, such as the development of micro lecture resources and the creative design of micro lectures (Ling, 2012); and (2) the application of strategies and the efficiency of micro lecture resources in teaching (Fan, 2012; Fan, Zhang, Bai & Lin,

2012). Compared with other forms of educational resources, micro lectures integrate text, audio-visual components and multimodality into classroom teaching and break the complex body of knowledge into more fancy fragments to promote learners' interest and enhance their understanding. Moreover, because of their advantage of being in small bits, micro lectures can be easily transmitted, downloaded and replayed in a variety of ubiquitous equipment. The micro lecture presents the possibility of changing the learning modes of the net generation (Jiao, 2010, 2013).

Micro lectures can be classified into three categories as follows, according to their timeline.

Knowledge points type

This type focuses on specific knowledge or illustrates one point in one session. In this type, lecturers dwell on a specific point, display examples, or explain the concrete steps. This kind of video clip can be flexibly applied before, in and after class.

Creating learning context type

This creates a learning environment, and generates a task environment or targets which inspire thinking. Through the video clips, the background of knowledge can be created which provides active models for role play. Within a continuous period of time, the students are required to cooperate, raise questions and seek answers for them by using video. This type is intended to help students conduct deep learning and enhance their capacity for inquiry.

Presentation and the evaluation type

When collaborative learning is completed, the students need to submit a videoed assignment to meet the course requirements. In the assignment, they have to display and interact and evaluate themselves with their peers. This kind of video-making is implemented throughout the whole learning process. After the groups of students choose their own topic, they need to complete their own task design, do independent learning, and cooperate and consult with other students in the course of learning.

Research methodology

In distance educational institution, such as the Open University of Jiangsu (OUJS), the majority of students are working adults. Some of them study to prepare themselves for opportunities to change their personal career course in the near future. To satisfy students' diverse requirements, the five objectives of the *English for Business* course are to:

1. demonstrate good basic skills in listening, speaking, reading, writing and translation;
2. describe international business practices and their operation in the import and export trade;
3. use office software skilfully;
4. illustrate the procedures in the management of a firm; and
5. communicate effectively on formal occasions.

Research design

This research employed an exploratory case study approach aimed at providing the best available practices, processes and performance of blended learning in the OUJS setting. The study adopted a combination of observation and a questionnaire. In addition, unstructured interviews were used to collect detailed comments and feedback on the implementation of the micro lecture integrated course.

Participants

Currently, the Open University of Jiangsu has two streams of students: those who are full-time on campus learners and those who are open and distance learners. Both streams of students can access the online platform with the learning management system. Forty-eight students registered on the *English for Business* course were chosen and informed about the experimental teaching for one semester. The participants selected had been taught in the traditional face-to-face classroom teaching modality. As they are from the new net generation and are digital natives, theoretically they would favour the technology-enhanced pedagogy.

Teaching and learning materials

In the series of micro lectures, the course book *Century English for Business* was used, which is specially designed for full-time students on campus. The course book contents are arranged in units with authentic learning tasks as the main activities, which provided a quite satisfactory base for the adoption of technology in classroom teaching.

Design of the instructional pattern

Penrose proposed five steps for constructing micro lectures, which guided our design viz.

- ✓ List the core concept which will constitute the centre of the micro lecture
- ✓ Prepare an introduction to provide context for the core concept
- ✓ Create a video lasting less than 3 minutes
- ✓ Facilitate exploratory learning of the content
- ✓ Upload the short video clip with assessment tasks to the LMS. (Shieh, 2009)

Based on the above principles and procedures, we designed the short video clips, focusing on key concepts in commerce and business, thus creating a favourable learning environment to inspire students to think, explore, and seek answers by raising questions on the videos. The details of the course design are illustrated in Figure 1.

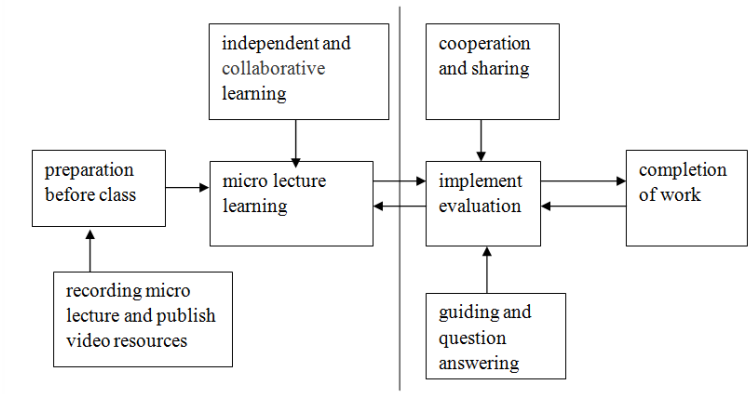

Figure 1 Teaching pattern with micro lecture resources

Data collection and analysis

During the implementation of the design, observation accompanied the whole teaching and learning process. A questionnaire and unstructured interviews were used to collect students' comments and feedback on the micro lecture resources, the utilization of the resources and the degree of knowledge internalization and change in learning interest. The unstructured, in-depth interviews were conducted to give more insight into the assessment and evaluation of the design of the micro lectures for the course. All the interviews were recorded, transcribed, coded and analysed using qualitative grounded theory method (Corbin & Strauss, 2008).

Implementation

In their learning culture, Chinese students are used to traditional face-to-face classroom scenarios (Xiao, 2008), in which being taught is taken for granted. However, for the younger students born after the 1980s — the so-called 'net generation' and digital natives — multimedia with the Internet is the learning format they like. With previous successful classroom teaching experience in the teacher training programme (Zhang & Hung, 2007), we decided to adopt the flipped classroom format, which was more appropriate for integrating the short video clips into the formal classroom lectures.

Preparation

Based on the learning content and students' learning styles, the lecturer presented and analysed the learning objectives and sliced the given body of knowledge into smaller chunks which were relatively complete and interrelated.

The lecturer used a screen recording software, for instance Camtasia Studio 8.0, to do the video recording. In this process, the lecturer used the screen brush tool to highlight the key points, and then uploaded the video to the cloud and other platforms or Web 2.0 tool to share the production with learners.

Independent learning of the micro lecture resources

Before attending the class activities, learners could use a variety of computer-mediated learning tools, including mobile devices, to study the micro lecture resources independently. For this, a variety of social media software were used to do collaborative learning with peers.

Self-evaluation

Quiz Creator 4.5 was used to embed different questions and popped quiz items to guide students to complete their tasks. In this process, the micro lecture was designed to intelligently diagnose and lead students to start their autonomous learning. By answering questions which appeared in the micro lecture videos, students could conduct self-evaluation. A game-like design triggered them to target 'the last trophies of their war of learning'. If the learners did not encounter setbacks in the learning process, they would move directly into the final stage of accomplishing learning. If some points had to be clarified or problems solved in the process, the micro lecture resources had to be studied again from the outset. Also, guidance and advice from the lecturer could be sought. The completion stage started after the problem(s) were solved.

Assignment uploading for evaluation

The videoed assignments were submitted by students based on the lecturer's set requirements. The students chose any topic in which they had an interest, worked in groups, contributed their ideas and cooperated with teammates in discussion and making the videoed assignments, which they were asked to upload. In making their video assignments, the learners had the freedom to choose between the formats of the Camtasia Studio 8.0 or Snagit V91.2.0.

Results and Discussion

The integration of the micro lectures into the *English for Business* course proved to be designed satisfactorily after one semester's practice. The data collected from the current practice are in agreement with the generic assumption that micro lectures can be a good choice for blended learning and are appropriate for catering for diverse

learners' needs. The results of this exploratory case study also conform to Li's (2014) findings in the Open University of Hong Kong, which also favoured learners' engagement in learning.

Learning content with technology

In the construction of micro lectures for the *English for Business* course, the lecturer provided three types of resources: guiding resources, content resources, and process resources. Guiding resources are the rubrics; content resources include media materials and case study videos; and process resources contain experimental work. The results showed that 90.18% of the students liked case study videos because this kind of resource challenged their intelligence most. In addition, students can use mobile devices to learn anytime and anywhere.

Learning support service

The learning support service involved online tutoring functions, including learning tools, synchronous and asynchronous web-chats, various hierarchies of practice activities, feedback from peers or the lecturer, peer cooperation and related learning resources. Fragmented learning content which misleads students in constructing meaning can be avoided. At the same time, to narrow the gap between formal and informal learning, the learning support service needs to enhance the use of communicative tools in synchronous and asynchronous online communication between the lecturers and students.

Learning management

Learning management comes from both the lecturer and online peers. Students cooperate and collaborate with peers, adjusting their learning pace according to their time schedules. Compared with the traditional paced learning schedule, blending learning with micro lectures provides flexibility in learning time which enhances the management of learning.

Students' learning experience

Most students enjoyed a satisfactory learning experience in the course

of integrating micro lectures. They admitted that, before the adoption of the micro lectures, they thought that the traditional resources (course books) were 'boring', had 'too many new words', were 'hard to understand', and 'left nothing in their minds after reading'; and they were 'often distracted' and sometimes could not find 'the suitable tools or steps to learn.' With the micro lectures integrated into the course, learning became appealing, engaging and fun. They understood that the micro lecture resources 'are based on knowledge points … particularly suitable for learning', and watching a video clip could 'guide them to practice'; and the screen brush tool could help them 'to find quickly the specific location of [the] knowledge point'. In their view, these micro lectures could 'help them to use their free time to learn' with 'no need to have a block of time for preparation'.

Some implications

The current practice benefits both the lecturer and students in terms of learning and teaching. The integration of micro lectures in blended learning involves the use of technology, such as Camtasia or Snagit. Moreover, this type of blended learning can also shape pedagogical design by bringing it close to students' active engagement (Inoue, 2010).

Learners' attention is constantly wavering, and so when lecturers record micro lecture resources, the guiding messages should be highlighted on the screen to help the students to concentrate and focus their attention on the content, thus leading to a deep understanding and reflection.

In addition, the lecturer acted not just as a facilitator and guide in implementing micro lecture resources, but was an indispensable learning partner in the whole learning process. Because autonomous learning is the key to the success of flipped classroom teaching of micro lecture resources, the lecturers' guidance on social networking tools can enhance learners' motivation and learning efficiency in the course of study.

Conclusion

In this paper, we have discussed blended learning and micro lectures,

and reported our practice of integrating micro lectures into the blending learning of the course *English for Business*. The current study adopted an exploratory case study approach. By exploring the practice of instructional patterns integrated with micro lecture resources, we focused on four fields: learning content with technology; learning support services; learning management; and students' learning experiences. The integration of micro lectures into the course was shown to be a satisfactory design after one semester's practice. The statistics indicate that the great majority of the students were satisfied with micro lecture teaching. The research findings show that the flipped classroom based on micro lecture learning resources can optimize the students' learning process. We believe that it is time to integrate micro lecture into formal learning in both online learning and face-to-face classroom teaching.

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