

5i: A Design Framework for Hybrid Learning

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Abstract. Existing challenge in offering education is the use of information technology in delivering contents and providing an interesting platform to enhance students' learning. Hybrid learning is becoming one of the important applications by integrating electronic learning and traditional learning platforms together. Teachers and course designers are interested in how to design a hybrid course in a more effective way. The author proposes a 5i design framework for designing course using hybrid learning approach. The 5i includes initiative, interaction, independent, incentive and improvement. The supporting arguments of the 5i framework are from the most recent and critical literatures in hybrid learning with most updated examples in teaching approaches. The author conducted a qualitative study in collecting feedback about the proposed 5i framework from students who are studying in different programmes and at different years of studies. The purpose of this paper is to suggest a design framework for teachers and course designers to design their hybrid course in a more effective manner.

Keywords: initiative, interaction, independent, incentive, improvement, hybrid learning and course design framework

1 Introduction

Learning is the acquisition and development of memories and behaviors, including skills, knowledge, understanding, values, and wisdom. It is the product of experience and the goal of education. The contemporary challenge in education is the use of information technology to enhance students' learning interests (Naqvi, 2006). Online learning (or e-learning) uses information and communication technology to build up a computer-based or web-based system platform for learning. It can be used as an independent tool for changing the behavior and experiences of learners. It can also be used as a supplementary tool to traditional classroom learning, which is called hybrid learning. Hybrid learning is to combine face-to-face classroom learning and learning by computer-based system (Brunner, 2007) and is becoming one of the most popular learning modes. This paper proposes a 5i design framework to facilitate course designers and teachers to design more performing hybrid related courses. The aim is to provide a framework with the most essential elements for hybrid course design.

Comments from students on hybrid course design and the 5i framework were collected through a qualitative research approach.

2 Background

Hybrid learning is necessary because face-to-face learning and online learning each have their shortcomings. The deficiencies of face-to-face learning include the need for teachers and students to meet at the same time. This mode of learning has lower flexibility and leads to inconsistent learning progress of students (Mansour and Mupinga, 2007). Online learning also carries the defect that students might be lost in their cyberspace (Mansour and Mupinga, 2007). Hybrid course design provides flexibility for institutions to engage in face-to-face classroom and online learning by providing students with relevant meaningful content while maintaining student-teacher relationship (Teeley, 2007). The strength of a hybrid course is to increase student performance and retention, giving them more time flexibility, the availability of multiple modes of learning, deeper sense of community and greater interaction (Brunner, 2007).

There are three strategies for online course: provides contents in multiple formats, allows for individual locus of control, and encourages active and collaboration interaction (Zapalska and Brozik, 2007). Zapalska and Brozik suggested that online environment can provide online projects, online work in groups, small group discussion in synchronous sessions, and virtual field trips and videos. However, most teachers got frustrated in designing online course because they feel their role is being eroded. Teachers' role has been changed to facilitator of learning rather than knowledge transferring in hybrid learning (Brunner, 2007). It leads to an argument between andragogical and pedagogical approaches in hybrid learning. Andragogy approach is a process of engaging adult learners in the structure of the learning experience that requires more self-directed learning style. It is commonly utilized in online learning. Pedagogy is a process of being a teacher to provide teaching and learning strategies of instruction. Pedagogy is used in traditional classroom learning. However, Muirhead (2007) suggested that a mixture of two approaches is more appropriate.

Lee, Tseng, Liu and Liu (2007) found that digital content is important to learners' satisfaction towards online learning. However, pedagogy approach is still considered vital in a classroom setting. They claimed that the role of teacher should play a less important role with weaker influences in online learning. This is quite different to the traditional classroom learning in which teachers are liked performers on stage and has more influences to the students' learning motivation and attitudes. With less interaction and influence of teachers in online mode, teachers find difficulties in designing an effective hybrid course to strike off a balance of their roles between andragogical and pedagogical approaches. The literatures reflect that each mode of learning has their own advantages and deficiencies. A blend learning approach by using both modes of learning together could take the advantages over others and diminish the effect of the deficiencies. However, there are few studies in proposing

the factors in designing a course by using a hybrid learning approach. It leads to an important issue to uncover the essential elements required in designing a hybrid course, especially the relevant core activities required in face-to-face and online modes, and their mutual relationship.

3 5i Design Framework

The following discussion is about a proposed 5i design framework for a hybrid course. The 5i are initiative, interaction, independent, incentive and improvement.

3.1 Initiative

Students might be easily initiated to attend traditional classroom training. However, motivating them to attend online sessions is always a problem. A hybrid course should contain elements to initiate students to actively participate in online learning (Bates and Watson, 2008) and classroom training. Verbal communication is often used in traditional classroom training (Bates and Watson, 2008) because it is more convenient to instruct students to read notes and have discussion in class. However, the lack of monitoring and direct instruction in online environment has popularly resulted in communication problem and inactive participation of students.

In hybrid learning, students may take half of their time in classes and half of their time online. It implies that both students and teachers under the traditional teaching mode may need special training on how to communicate online (Bates and Watson, 2008). Teacher's role is being changed. The concept of teaching is moving to 'learning' because the responsibility of learning will depend on the initiative of students (Bates and Watson, 2008). Traditional way in learning by reading notes, conducting project and doing homework are no longer sufficient (Bates and Watson, 2008). Online learning allows students to seek the most up-to-dated knowledge and discover the underlying theories in order to enhance their initiative. In order to increase students' initiative to use hybrid mode of studies, direct instructions and guided discoveries should be incorporated (Clark, 2000 cited in Bates and Watson, 2008). Direct instructions are essential in face-to-face lecturing so students can understand the fundamental knowledge by the explanations of teachers. Guided discoveries are to let students learn on their own by observing the theory, asking questions and discussion, which can play a better role in online mode. More interactive activities in online learning could even help to improve students' initiative. Bates and Watson (2008) suggested the use of games, puzzles and flash exercises but not tests because of the problems of cheating and identity. Those activities could initiate students' capabilities in self-discovery and self-directing (Teeley, 2007) both in the traditional and online modes of learning.

3.2 Interaction

There are two ideas in interaction here. One is the interactivity of activities in online learning. Second is the interaction of activities between traditional classroom mode and online mode. One critical feature of online learning is to provide group interaction opportunities (Lee, Tseng, Liu and Liu, 2007) among students, and between students and teachers. High level of group interactivities including learning communities and peer review is required (Bates and Watson, 2008). This heavily depends on the creativity of teachers and course designers and the availability of the relevant technology. The emergence of new technology, such as the introduction of Web 2.0 provides new platforms for more creative applications for interactions. The importance of interactivities in hybrid learning is to cater for different learning style of students (Negas, Wilcox and Emerson, 2007). Teachers do not have the time to care for each student's learning progress in classroom mode because of large class size, however, online learning provides teacher better interaction with individual student's enquiries. It puts problems back to the teachers requiring them to have new mindset for teaching. Teachers should transit from being standing on stage to a facilitator role in learning. They should have more interactions and sharing of knowledge with students through socialized activities online apart from just the delivery of knowledge (Brunner, 2007).

Second area of interactions is to integrate activities in classroom mode and online mode. Most researchers and teachers emphasize interactivities in each mode of learning only. Few of them suggest interactivities between the two modes of learning in order to have effective hybrid course design and learning. Some hybrid courses have applied one side of interactions such as requiring students to attend a class and work on assignments or projects online. However, teachers should discuss the work done by students. Currently most teachers provide their comments in online environment. Teachers could discuss students' work that done online in class. Teachers can also discuss in classrooms about the online communication among students. These activities will further enhance the other 'i' that would be discussed later.

3.3 Independent

Students should work and think independently in both modes of learning. Online mode of learning emphasizes social interactions by group discussions. One disadvantage is that students still encounter difficulties in doing homework, assignments and arranging their workload outside classroom environment (Lee, Tseng, Liu and Liu, 2007). In hybrid learning, teachers play an important role in online environment for students' pace of learning (Negas, Wilcox and Emerson, 2007). Teachers should design a hybrid course with training in students' self-regulation and control of learning (Negas, Wilcox and Emerson, 2007). It is definitely critical now because students spend too much time on the Internet in surfing irrelevant information for studies. They will be lost in the virtual environment. Their online peers easily affect their thinking. A hybrid course should be designed to allow for independent study and working (Teeley, 2007). Pre-set case studies and projects

might lead to similar answers that students might depend on each others' ideas, so students could be requested to apply the knowledge learnt in classroom to design their own scenario of cases and projects. Details of the requirements are briefed in the classroom mode. Students need to search information on the Internet and think and work independently to design their own case. Their peers will act as inputs to discuss the requirements but not the final answers.

3.4 Incentive

Students should be motivated to learn in the two learning modes. Incentive approach is then required. As mentioned above, proper design of interactivity between online learning and classroom will affect learners' intention to use online system (Lee, Tseng, Liu and Liu, 2007). Current practices in compulsory participation or summative assessment to stimulate discussion might not be appropriate for motivating students (Muirhead, 2007). Students will be motivated to attend both modes of learning if activities are cross-referenced between them. Students also will be motivated if the activities or functions they are familiar are used in the hybrid course. For examples, students may prefer to have games in classroom instead of intensive direct lecturing (Bates and Watson, 2008). Web blogs, as one of the most common online activities, are used in online mode for students to post and express their views. They can be used to enhance students' motivation to join the online activities (Bates and Watson, 2008). Students will also be motivated by allowing them to build up their own community (Brunner, 2007). This could be achieved by allowing students to freely raise any topic for discussion rather than discuss the topics defined by teachers.

3.5 Improvement

A hybrid course must be designed such that students know there are improving in learning. Traditional way of assessing students' learning progress provides marked and graded works to students who, then can check whether they have improvement in attending the course (Teeley, 2007). This could be achieved by using integrating technology in providing statistical results to students about their learning progress. However, intangible improvement should be catered. Some students might be reluctant to give comments and voice out opinions in classroom environment (Teeley, 2007). Online environment gives less pressure to them and encourage them to actively express their views. These students will feel improvements in initiation and independence activities. Their comments could be further discussed in classrooms for motivating them to continually express their ideas (Teeley, 2007). Peer review is another approach for improvements. Some students may feel more comfortable in listening comments and feedbacks from peers (Teeley, 2007). Teachers can allow students to mark other students' assignments and allow them to discuss other students' work in class. Students will have more positive attitude towards the mistakes and would be more likely to make corrections.

4 Methodology

The study uses qualitative methodology in collecting opinions from a group of students enrolling in a general education course - "Information Technology and Modern Life".

Qualitative approach focuses on measuring people's experiences on an event processed and structured inside a social environment (Skinner, Tagg and Holloway, 2000). Researchers using qualitative research would like to investigate the issues in complex, messy and a situation that involves different stakeholders. Qualitative research helps practitioners and researchers have a deeper understanding and rich insights (Cassell et. al., 2006) of an unstructured problem circumstance. Qualitative approach, as an interpretative paradigm, is appropriate in understanding the social setting and theories of a hybrid course design.

Focus group was employed in collecting information from students. Focus group has the original idea as being a focused interview by emphasizing a specific theme or topic for each group. The members of the focus groups, the students, have certain level of understanding and experience about the research topic (Bryman, 2004). Using focus group is appropriate because it is a popular method for researchers to examine the way the participants in conjunction with one another (Bryman, 2004).

There were two rounds of forming focus groups for collecting information. The participants are students studying a general education course. The students are from different programmes and years of study. The reason in selecting those students is to avoid any possible bias in one profession such as business administration, computing studies, etc. The students were to form groups with three to four members voluntarily. In the first round of focus groups, twenty-four students participated and totally seven groups were formed. The researcher designed a set of questions for them to discuss. The second round of focus group discussion took place a week after. Twenty-eight students participated and nine groups were formed. Again, the researcher designed questions for discussion. In the second round of focus groups, the researcher has briefed the students about the proposed 5i design framework before the discussion.

The focus group discussions were conducted in a computer laboratory in which each student has a personal computer with Internet access. The students were allowed to search information from the Internet for discussion. The researcher did not take part in this discussion. The durations allowed for the first round and second round focus group discussion were 45 minutes and 50 minutes respectively.

5 Results

Content analysis was used to explore the information collected from participants. A summary of the major comments in the first and second rounds of focus group discussion is listed below:

Table 1. Major comments from first and second round of focus groups

First round of focus groups	Second round of focus groups
Activities in online learning mode:	Activities in online learning mode:
<ol style="list-style-type: none"> 1. Online discussion 2. Upload assignments 3. Check marks 4. Video in classroom instructions. 5. Material for download 6. Sample questions and answers 	<ol style="list-style-type: none"> 1. Online discussions 2. Gaming 3. Tests 4. Sample papers 5. Search information on the Internet
Activities in classroom mode:	Activities in classroom mode:
<ol style="list-style-type: none"> 1. Discussions 2. Tests 3. Presentations 4. Lecturing 	<ol style="list-style-type: none"> 1. Discussions 2. Tests 3. Presentations 4. Field studies 5. Debates

Major comments from students on the proposed 5i design framework are listed in the following table.

Table 2. Major comments from students on the proposed 5i framework

5i design framework	Comments from students
Initiative:	<ol style="list-style-type: none"> 1. Attendance 2. Reward 3. Assignment available in classroom only 4. Rich and variety of information for download
Interaction:	<ol style="list-style-type: none"> 1. Game 2. Use MSN for communication 3. Discussion forum 4. Apply knowledge to the case the youth is familiar 5. News cutting and discussion by students
Independent:	<ol style="list-style-type: none"> 1. Individual work 2. Using web blogs to express opinions
Incentive:	<ol style="list-style-type: none"> 1. Bonus for attendance 2. Student with higher bonus can have priority to join special functions 3. Scholarship
Improvement:	<ol style="list-style-type: none"> 1. Collective results on marks 2. Peer reviews 3. Samples of good works from other students and give comments

6 Discussion

When the 5i design framework was described to students, a significant difference in students' feedbacks was found in favoring the framework. From the activities identified by students in the two rounds of focus groups study, it was found that the success of hybrid learning could be achieved by designing a hybrid course with focus on the 5 "i" of the proposed framework.

Although the students are having all of their classes in traditional classroom instruction mode and the college's WebTL system does not provide sophisticated function in allowing them to communicate with teachers and other students very frequently, it was observed that the activities suggested by students show that they understand the two types of teaching and learning approach: andragogy and pedagogy, which Muirhead (2007) suggested that a mixture those two is more appropriate in hybrid learning. The activities suggested in the two rounds of focus groups even though were very similar, but lecturing is considered as most significant activity in the first round of focus group but is considered as less significant in the second round. The debate activity was not mentioned in any one focus group in the first round of discussion but was mentioned in the second round of study. It is quite important that as students understand the importance of the 5 "i" elements in designing a hybrid course, they could mention what activities should be used. Debate is definitely an andragogical approach that requires students' self-motivation and self-directed attitude in searching relevant and arguable information. It also shows that students should need to come back to classroom mode to present their ideas. Learning is an active process that students construct their personal understanding and meaning of the subject matter (Seyhan and Morgil, 2007). Construction approach enhances students' learning by integrating the 5i elements in a hybrid course. This shows that after students learnt that hybrid course should be designed with the five elements, they would expect more variety of peer activity that they did not think of before.

By comparing the activities proposed from the two rounds of focus groups, the ones from the first one are quite passive. This is not surprising because the current students are using the college's WebTL system that is mainly for downloading materials. Few teachers allow uploading of works from students and even fewer teachers use discussion groups. The activities they identified and proposed were one-way communication, such as "materials for download", "upload assignments", "video", "check marks" and "sample questions and answers". After the students were introduced the 5i design framework, they started suggesting different activities. Two typical activities are "Gaming" and "Search information on the Internet". This echoes the ideas from Bates and Watson (2008) and the proposed "initiative" and "interaction" of the 5i framework. The activity "search information on the Internet" reflects students' ability of self-talk and self-interaction. It is also the "independent" of the 5i framework.

The comments from students concerning the 5i are quite different. For initiative, the comments are quite passive and operational. Students' comments about initiative in attending classroom and online mode by teachers include taking attendance and reward. For incentive, students suggested that they would be motivated if they have bonus marks or scholarship. These two findings could be explained by the fact that the students in the college were usually with less satisfactory results in public

examinations (HKCEE and HKALE). Their initiative and motivation are quite insufficient. However, this fact should lead to same argument for other 3i. However, some of the comments on “interaction”, “independent” and “improvement” were not so passive. Students commented that using “MSN” can achieve interaction, using web blogs can achieve independence and using peers review can achieve improvement. Their comments support the above descriptions that by using the online activities the students will get familiar to and can enhance the effectiveness of online usage. This shows that incentive can be achieved indirectly but not being recognized by the students. The comments reflect that effectiveness of a hybrid course relies on how the teacher designs the hybrid course to facilitate students’ participation and learning.

The qualitative study collected information from students concerning their ideas about hybrid learning environment. The views about the 5i design framework support the importance of the 5 “i” but cannot fully validate the 5i design framework. From the literature review, the 5 “i” framework sounds general idea but it is significant in considering an integration of activities between two modes of instruction in hybrid learning. Further evaluation of the proposed framework is recommended. The qualitative study gives positive results towards the framework and it is part of the author’s research. The author is planning to design a course with hybrid approach and to apply the 5 “i” in designing the course content and activities. An empirical research will be followed in evaluating the results after the 5 “i” techniques are used. The author also recommends other researchers and practitioners to evaluate their hybrid course by focusing the 5 “i” and carry out similar evaluation by a quantitative study.

The proposed 5i design framework is constructed by critically identifying the work of other researchers and practitioners. Although the value of the framework depends on further application and evaluation, it could act as a foundation for designing hybrid course. When practitioners design a hybrid course, they know there are 5 “i” elements that are necessary in deploying different activities between traditional classroom mode and online mode of learning. The current limitations of the proposed 5i design framework include limited validation since feedbacks were collected from students studying in a general education course and further validation of the framework’s value by an empirical study is necessary. The feedbacks from the current students were limited to their experiences in using hybrid course and the WebTL in the college. However, the advantage of examining the ideas of the current group of students is their variety of backgrounds, such as programme, level of study and the nature of a general education course. The comments were expected not to be bias to any one discipline. It is recommended to further elaborate and examine the 5i design framework by designing and applying a hybrid course and collect feedback from students after they have practical experience in both modes of learning.

The proposed 5i design framework provides focus to teachers in designing hybrid course activities. Technology is one of the current research issues in designing a hybrid course in order to provide more variety of functions to students, however, the overall approach in delivering the teaching and learning package in hybrid learning is equally important. The 5 “i” design framework provides useful and understandable guidelines to design a hybrid course structure and aims at encouraging students to achieve initiative, interaction, independent, incentive and improvement in hybrid learning environment and gain the most effective and efficient learning outcomes.

7 Conclusion

Online learning is a growing trend in education. Students are increasingly spending more time on the Internet. This has forced educators to move some of the learning process to online mode. Hybrid learning is a new trend of education approach by combining the advantages of classroom training and online learning. However, it is challenging to teachers in designing an effective hybrid course that can enhance students' learning. This paper studies the results from other researchers and proposes a 5i design framework for hybrid learning. The author conducted a qualitative study in collecting their comments about the proposed framework. The results are positive towards the framework. The author expects the 5i design framework can work as a foundation for course designers and teachers in designing their hybrid course.

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