

HOW MUCH OF BLENDING IS NEEDED TO BE EFFECTIVE: PERSPECTIVES FROM LECTURERS AND STUDENTS

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ABSTRACT

We are constantly seeking for the best method to teach our students. Lecture style which is in existence for many years is still applicable to a certain extent. The birth of personal computer and the Internet has resulted in a wide spectrum of instructional strategies taking advantage of these two wonders. One of them is distance learning and the other is blended learning. How much of blending is needed for teaching to be effective? In this experiment the degree of blending ranges from 25% online to 75% online. Internet is used in the online mode together with the learning management system (LMS) to support teaching and learning. It is established that for blended learning to succeed, online forum discussions are very important. Students who fail to capitalize on the forum discussions do not enjoy the full benefits of blended learning like producing more mature assignment write-up, involving in self-learning and developing time management and writing skills. With regard to the different degree of blending it seems that 25% online mode may be the lower boundary and 75% online mode the upper boundary for effective blended learning. The preferred mode by both the lecturers and students is 50% online. However, these percentages need further confirmation through more in-depth studies.

***Keywords:** Blended learning, e-learning, degree of blending, students' perceptions, lecturers' perceptions, internet.*

INTRODUCTION

We are constantly seeking the best method to teach our students. Lecture style which is in existence for many years is still applicable to a certain extent. In higher education, 83 percent of lecturers use lecture as the predominant teaching strategy (U.S. Department of Education, 2001). The birth of personal computers and Internet has resulted in a wide spectrum of instructional strategies taking advantage of these two wonders. One of them is distance learning. Although benefits of distance learning are many, its drawbacks if relied upon exclusively are physical isolation, lack of social support or interaction, and high attrition rates. Distance learning often suffers from making large amounts of information available for students to absorb independently (Waddoups and Howell, 2002). Hence, an alternative is to blend distance learning best practices with that of face-to-face teaching giving rise to blended learning which created opportunities for students to interact with their peers, faculty, and contents, in an effective manner both inside and outside of the classroom.

According to Wade (2012) universities are now making more use ICT technologies and many have adopted a blended approach to deliver their courses. And the current trend is to design MOOC (Massive Open Online Courses) for blended learning in a flip classroom (Caulfield, 2013).

What is blended learning? There are many definitions given to this term, the most common being blended learning is described as the mix of traditional methods of teaching, such as face-to-face teaching and online teaching (Bliuc et al., 2007). Blended learning emphasizes the central role of computer-based technologies. It is tailored in the sense that the face-to-face teaching (offline mode) is integrated with e-learning (online mode). It is through the integration of these two modes of learning that gives the true meaning of the word blended. We cannot have the online mode and the offline mode being taught as two separate entities.

In higher education, blended learning is often referred to as the hybrid model. In the University of Wisconsin in Milwaukee, hybrid courses have significant portion of the learning activities moved online resulting in time traditionally spent in the classroom is reduced but not eliminated (Vaughan, 2007). Bourne, a professor of electrical and computer engineering agreed that within five years 80 to 90 percent of classes could sometime become hybrid (Young, 2002).

How much of blending is needed to be effective? Allen and Seaman (2003) agreed that blended courses integrate online modes of delivery into the regular classroom in such a way that at least 30% of the course is taught online. In this experiment the degree of blending ranges from 25% to 75% online. In some blended courses, the time for class session is reduced to once per week, or occurs only every second week or at certain points throughout the semester. Many students who have tried blended courses say the model fits their attention spans and their lifestyles and a meeting of 50/50 is nice (Sarah Hangen, reported by Young, 2002). There are, in fact, an enormous variety of face-to-face ratios to online time but majority of them ranges from 25% to 50% as reported by Aycock et al. (2002).

Why do we choose blended learning? According to Graham, Allen and Ure (2005) people choose blended learning for three reasons, they are, improved pedagogy, increased access and flexibility and increased cost-effectiveness. The interest in blended learning remains high because of studies that claim it is more effective than either online or face-to-face instruction on its own (Ash, 2012). Two key factors influencing the growth of blended learning are access to learning and flexibility. Blended learning approaches provide an opportunity for reaching a large, globally dispersed audience hence it is cost-effective.

Student and Faculty Perspectives

Blended learning has emerged as a preferred mode of delivery (Bersin, 2004; Eijl, Pilot, and Voogd, 2005; Tang and Byrne, 2007). According to Tang and Byrne (2007), 72% of academic leaders agree that blended courses held more promise than distance learning. In fact through their experiment, it is evident that students preferred the blended learning mode compared to the face-to-face mode and even distance learning. This finding is in contrast to Osgerby (2013) investigation of students' perception of blended learning which concluded that students appear to have a positive attitude to the adoption of ICT-based learning, they

prefer face-to-face lectures and step-by-step instruction. Wong et al. (2014) concurred that there is a strong support for face-to-face lectures and tutorials which are rated as the preferred learning options. On the other hand, lecturers have neutral perceptions in this aspect. Aycock et al. (2002) disagreed, as they found that all the lecturers involved in blended learning pilot project recommended using this approach to others and planned to teach a blended course again. The reasons for this positive perception are enhanced interaction with students, increased student engagement in learning, flexibility of the teaching and learning environment and opportunities for continuous improvement. Spilka (2002) and King (2002) reported that through forum discussions students are required to extend their thinking much further than in face-to-face discussions. Consequently, they acquire high quality analysis and thinking resulting in more thoughtful, tactful, and sensitive reports or assignments and substantial peer-to-peer interaction. Naaj et al. (2012) reported students' satisfaction is influenced by a combination of factors which include the lecturer, the technology, class management, interaction and instruction. This experiment will attempt to explore the students and lecturers' perceptions at the different degree of blending.

Lecturers involved in blended learning reported that students wrote better papers, produced higher quality projects and were capable for more meaningful discussions on course materials (Vaughan, 2007). Aycock et al. (2002) concurred with Vaughan and suggested that this improvement is due to students being more engaged in their learning process. It is interesting to note that Sands (2002) claimed that blended courses become "de facto writing intensive courses" for the students due to the text-based nature of the online forum discussions and emails. Spilka (2002) went a step further in stating that blended learning increases the opportunities for self-directed learning and develops project and time management skills. It is not generally true for Asian students, in particular Thai students as reported by Prangpatanpon (1996). There is a lack of self-learning activities among these students because they are used to authoritarian practice, and are willing to accept what their lecturers said without questioning.

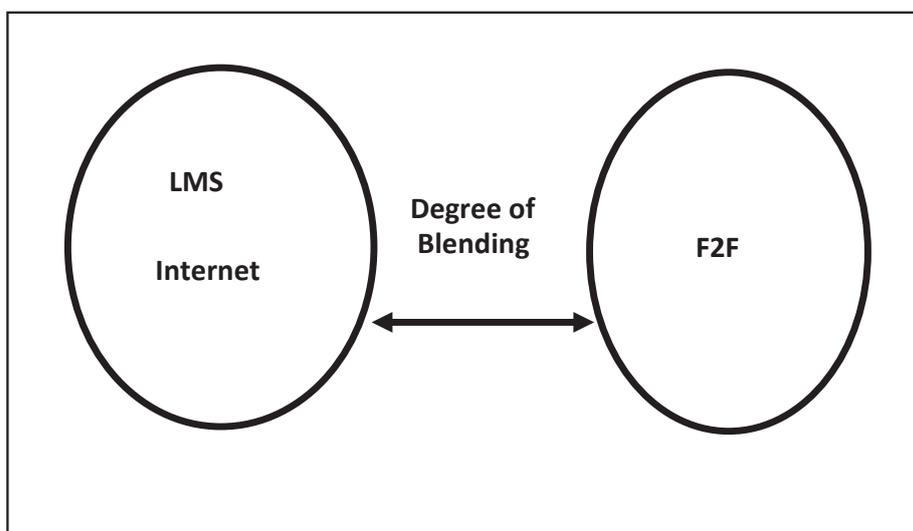
Internet

In this blended model, the Internet is used in the online mode together with the learning management system (LMS) to support teaching and learning. The LMS should be able to deliver this content properly, even when the content has not been specifically designed to run with the chosen LMS (Rey-Lopez, Brusilovsky et al, 2008). The Internet can improve the interaction of student-to-professor, student-to-student, student-to-material, and student-to-expert through the various Internet tools like email, bulletin boards, chats, listservs, and the Web (Wang, 2007). Perera and Richardson (2010) suggested that the quality of the actual time spent online may be influential on learning outcomes. And students who attempted the online quizzes multiple times performed much better than those who attempted the quizzes fewer times (Williams et al., 2012). Unfortunately, according to Jones (2002) there is still some reluctance among university faculty to adopt internet technology in classroom teaching. The reasons given are heavy workload, lack of training, caught in the dilemma as to whether to spend time on technology or research, and lukewarm support from the university administrators.

On the other hand, students are active users of internet in their daily life routine. Hence, it is imperative that internet is channeled as a useful resource to benefit students academically (Wang, 2007). Otherwise students will waste these valuable resources on

nonacademic activities which may distract them from their schoolwork (Matthews and Schrum, 2003). In this study, students have to serve the web in search of relevant online articles to support their discussions in the forum.

Blended Learning Model



Degree of blending



In the blended learning model, for the online mode we use forum discussions to replace face-to-face instructions. Lecturers are introduced to various online activities that they can choose from in the forum discussions. Among others, the activities are

- Search for relevant online journal articles
- Online bibliography format
- Peer evaluation of group assignments
- Group collaborations
- Self-evaluation through online assessment
- Case studies
- Simulations from learning objects
- Summary and analysis of postings

One of the important aspects of blended learning is the integration of offline and online activities. Lecturers can select two or more interesting discussion threads in the online forum for further discussions in the classroom. In this manner students can see the continuation of the discussions and not view the offline and online activities as two separate entities. Furthermore, lecturers are advised to leave some rooms in the topics taught in the classroom so that the students can deal deeper into the topics in the online forum

discussions. Students can search the Net and read both offline and online journals for more information. Last but not least, findings or solutions from the group assignments initiated in the classroom can be put up for inter-group discussions in the online forum.

Besides online forum discussions, the online mode of the blended learning model also includes online assessment for lesson revision. Students are encouraged to login to the online test to check their understanding of the lesson taught. Feedbacks are provided in this online test so that students can learn from the mistakes made. Since it is a self-evaluation students can take the test anywhere anytime convenient to them. They are briefed on the significance of the test to support their learning in the online mode.

Lecturers will upload their teaching materials in the form of lecture notes, assignments, tutorial questions with solutions, relevant Internet links and many other materials to support their instructions in the online mode. Emails are used extensively for correspondence between the lecturers and their students as well as among the students themselves.

For the online mode, lecturers have to search for Internet links to support the students in the online forum discussions. Of course, students can source for relevant online articles themselves but it is a good practice to give them a comfortable lead or starting point so that they can move forward thereafter. Both lecturers and students will keep record of the URL of the resources used in the online discussions. They can refer to them for future reference as well as to learn how to make proper bibliography in their assignments.

The other aspect of the blended learning model is the offline mode or face-to-face teaching in the classroom. Lecturers will carry out their teaching in the manner they normally do but they have to make sure this offline mode is well integrated with the online mode. They are required to upload their teaching materials to the learning management system. Some of them make use of emails to correspond with their students while others prefer to talk to them directly in the class.

Blended Learning Strategies

Lecturers in this experiment have the choice of using any one of the blended learning strategies listed. They can mix-and-match some of the strategies.

10-minute PowerPoint Slides

A few days before the class students answer questions from the lecturer and upload them to dropbox. Based on the answers, lecturers give them feedback. On the actual day, students prepare a 10-minute PowerPoint presentation in the classroom. Question-and-answer follows. In the online forum discussion, students are required to ask one additional thing related to the presentation that answer is not already provided. Of course, they can also give feedback on the presentation.

Online Debate

Students make preparations for an online debate; lecturer provides feedback on the preparation and lecturer may support them with some important information. Online debate is conducted asynchronously. Online debate continues in the classroom. Students observing

the debate in the classroom provide formal evaluation and post evaluations to the forum; their peers can comment on the evaluations and provide constructive feedback.

Read and Post

Students read materials posted by the lecturer and other online articles. They answer a few questions from the read-up and post them to the forum. Thereafter, post thoughtful responses to two of their peers' postings. They can agree or disagree with their peers with reasons. They will discuss their work in the next face-to-face class.

Technical Materials

For unfamiliar and technical materials conduct face-to-face discussion first. Students upload completed product to dropbox, receive feedback from the lecturer, then present the product during next face-to-face session. Thereafter, students discuss online the differences in the product.

Case Presentation and Role Play

Create an authentic case in your subject area. Make sure it leads to a serious controversy that needs arbitration to resolve. You may add in names to make it more realistic. Your students will read the case online and prepare for the arbitration. At this moment they do not know which role they are playing. In the class, place students in groups and assign each group specific role to play. One group of students will function as arbitrator. The arbitrator will decide on the case with reasons. The decision is posted to the forum for students to comment. In the event, students do not agree with the decision of the arbitrator, lecturer has to step in. It is advisable for the lecturer to comment offline.

THE STUDY

In this study we would like to seek answers to the following questions:

- What are the lecturers and students' perceptions of blended learning?
- Are there improvements in the students' maturity in assignment write-up measured in terms of in-depth discussions, wider spectrum of viewpoints and comprehension of topic discussed?
- What is the prefer choice of online mode (25%, 50% or 75%) in blended learning by the lecturers and students?

METHODOLOGY

This experiment lasted for eight weeks involving three lecturers and a total of 103 students. All the three lecturers volunteered for the experiment. They were trained on how to host online forum discussions in a workshop where they played the roles of student and lecturer. In addition, each of them was required to set at least one online self-assessment exercise to support their students in the online mode of learning. They were also trained on how to implement the blended learning strategies mentioned.

Each lecturer was given different degree of blending in this experiment, that is, 25% online mode, 50% or 75% the highest online mode. These percentages are arbitrarily chosen as the initial reference points to determine how much of blending is needed to be

effective. Further research will be carried out to fine tune them. In the courses students signed up with these three lecturers they were allocated three contact hours per week. Hence, for eight weeks the total number of contact hours is 24. For a 25% online mode, of the 24 contact hours 6 hours were spend for online interactions in the university LMS and over the Net where by both students and lecturer did not need be physically present in the classroom. Where else the remaining 18 hours were used for face-to-face interactions in the classroom. Lecturers were given the liberty to design the teaching log using the blended learning strategies mentioned. It is crucial they blend the online and offline learning activities carefully. Likewise, for the 50% online mode, 12 hours each were spent on online and offline activities. And for the 75% online mode, it is the reverse of 25% online mode, that is, 18 hours were utilized in online activities and 6 hours for offline activities.

Lecturers who participated in the experiment had to submit a teaching log spelling out in detail the topics they were teaching, the online and offline learning activities, how these activities were integrated, and assignment to cover the topics taught during the experiment. These learning activities were thoroughly checked through discussions with the lecturers to ensure integration and suggestions were given for improvement before the start of the experiment. Lecturers were also required to get ready the online assessment questions (at least five questions) as well as forum topics for online discussions.

On the first day of the experiment all the students were given hands-on experience in online forum discussions. They were briefed on the dos and don'ts of forum postings and the significance of the forum in blended learning as well as the roles they played in the new learning environment. They were asked to respond to the topics posted by their lecturers immediately after the briefing. Most importantly, they were reminded to respond to each other postings and not to the lecturers' postings only.

One week into the experiment, discussions were held with the lecturers to determine any technical hitches and to overcome any problems. Postings in the forum were checked for traffic and to a certain extent the quality of the postings. In the case of relatively low traffic, steps were taken to push up the volume. Lecturers had to ensure the forum was active. Monitoring of the postings was carried out asynchronously at the time convenient to them. Lecturers must bridge or integrate the two different modes of learning, that is, online and offline by continuing the forum discussions in the class.

Lecturers carried out the normal classroom teaching in the offline mode but they must ensure this offline mode was well integrated with the online mode as it is spelled out in the teaching log using the blended learning strategies introduced to them. The number of times a lecturer will meet with the students in the class will depend on the degree of blending (25%, 50% or 75%) used in the experiment. A timetable to this effect had to be prepared beforehand and distributed to the students. The importance of time management was explained to the students especially so during the online mode where they were completely 'free' on their own to plan their learning.

DATA COLLECTION

At the end of the experiment, students were given questionnaires to fill in the class and these feedbacks were collected back before the class was dismissed. They were told to give their honest opinions and there was no need for discussion. All the three lecturers were also given

feedback forms to determine their perceptions of blended learning. They were advised to fill the feedback forms after they had completed marking the assignments. This is because a few items in the form are related to the assignment. Unstructured one-to-one interviews were also conducted with the lecturers to gauge their reactions toward the experiment.

While marking the students' assignments, the lecturers were advised to pay attention to the maturity of the students' responses in terms of in-depth discussions, wider spectrum of viewpoints or coverage and comprehension of the topic discussed. The lecturers made these comparisons with respect to their students' work before the blended learning experiment.

RESULTS AND DISCUSSIONS

Three lecturers were involved in the experiment and they were individually interviewed as well as given a feedback form to fill. The responses received were encouraging. All of them said they will carry out this experiment again in the following semester. They unanimously said they would recommend blended learning to their colleagues. These findings are in agreement with Aycock et al. (2002). However, the biggest problem they faced in the forum discussions was getting the students to participate. Generally, students do not work for 'free', they need to be rewarded in the form of marks in order to get them actively involved in the forum.

It is interesting to note that one of the lecturers felt that 25% online mode is insufficient as the percentage is too low to give her students a full experience of the blended learning. On the other extreme, another lecturer considered 75% online mode as too high because of the problem in getting his students to participate in the forum discussions. These findings need further confirmation from more studies in the coming semesters where the focus will be to establish the lower and upper bounds for effective blended learning.

With regard to the students' maturity in assignment write-up measured in terms of in-depth discussions, wider spectrum of viewpoints and comprehension of topic discussed, one of the lecturers said "with the research from the Internet, the students are able to relate the practical knowledge to the topics taught in the class". However there was no significant improvement in the students' assignments write-up. Another lecturer felt that her students who participated actively in the forum managed to produce a more mature write-up which is in agreement with Vaughan's findings (2007). The third lecturer concurred with the second lecturer. His feedback "students who did not participate in the forum did not show any difference in their assignment responses". Hence, blended learning strategies can only benefit students who participated actively in the forum discussions.

A total of 103 feedbacks from the students were analyzed for their perceptions of blended learning. There were 43 students on 25% online mode, 25 students experienced a 50% online mode and finally 35 students worked on a 75% online mode. From Table 1, it is interesting to note that students from the 25% online mode have more favourable perceptions of blended learning as compared to their counterparts in the 50% online mode. Generally, the students were more active in online discussions (34.9% compared to 28.0%), carried out self-reading as recommended by their lecturer (41.9% compared to 32.0%) and had more postings in the forum (60.5% compared to 32.0%). A probable explanation is the students in the 25% online mode wish to experience a higher percentage of online activities

(as agreed by their lecturer). Of course, students from 75% online mode are generally positive towards blended learning in particular they were active in online forum discussions.

Table 1: Online Forum Discussions

Item	25% online mode		50% online mode		75% online mode	
	Agree	Disagree	Agree	Disagree	Agree	Disagree
Active in online discussions	34.9% (15)	9.3% (4)	28.0% (7)	52.0% (13)	71.4% (25)	11.4% (4)
Self-reading as recommended by the lecturer	41.9% (18)	7.0% (3)	32.0% (8)	32.0% (8)	68.6% (24)	14.3% (5)
Many postings in the forum	60.5% (26)	14.0% (6)	32.0% (8)	40.0% (10)	60.0% (21)	5.7% (2)
Enjoyed online discussions	39.5% (17)	18.6% (8)	36.0% (9)	32.0% (8)	54.3% (19)	22.9% (8)
Forum discussions continued in the class	53.5% (23)	16.3% (7)	20.0% (5)	44.0% (11)	62.9% (22)	5.7% (2)

From Table 2, irrespective of the degree of blending, all the students are agreeable that blended learning gives them flexibility of study time. This finding is in line with other study (Aycock et al., 2002). However, only the 25% and 75% online modes students agree that they spent more time reading and learning (48.8% and 57.1%) as well as experienced an improvement in time management (37.2% and 60.0%). These findings are important as these two percentages (25% and 75%) may eventually be the boundaries for effective blended learning.

From both Table 1 and Table 2, the 50% online mode students do not seem to favour blended learning. One possible explanation is this group of students was overworked with heavy assignments. Hence, the reactions received from them were generally negative.

Table 2: Advantages of Blended Learning

Item	25% online mode		50% online mode		75% online mode	
	Agree	Disagree	Agree	Disagree	Agree	Disagree
Flexibility of study time	53.5% (23)	11.6% (5)	56.0% (14)	20.0% (5)	57.1% (20)	17.1% (6)
Spent more time reading and learning	48.8% (21)	16.3% (7)	24.0% (6)	44.0% (11)	57.1% (20)	8.6% (3)
Improve in time management	37.2% (16)	20.9% (9)	8.0% (2)	48.0% (12)	60.0% (21)	5.7% (2)

It is interesting to note from Table 3, students from the 25% online mode preferred 50% online (69.8%, n = 30) and not a single student picked 75% online. Hence, it shows that

students from this group want to increase their online exposure but at the same time they do not want to sacrifice the social interaction and human touch they used to in a face-to-face classroom. At the other end, only 31.4% (n = 11) of students from the 75% online mode preferred to remain at 75% online. In fact, a majority of them preferred a lower percent of online (48.6%, n = 17). Hence, it seems that 50% online is the chosen one by the students.

Table 3: Preferred Degree of Blending

Item	25% online mode		50% online mode		75% online mode	
	Frequency	%	Frequency	%	Frequency	%
Preferred 25% online	13	30.8	12	48.0	7	20.0
Preferred 50% online	30	69.8	13	52.0	17	48.6
Preferred 75% online	0	0	0	0	11	31.4

CONCLUSIONS

In this study, it is established that for blended learning to succeed, online forum discussions are very important. Students who fail to capitalize on the forum discussions do not enjoy the full benefits of blended learning like producing more mature assignment write-up, involving in self-learning and developing time management and writing skills. As this finding only involved three lecturers, further research is needed covering more lecturers and possibly wider spectrum of disciplines.

With regard to the different degree of blending it seems that 25% online mode may be the lower boundary and 75% online mode as the upper boundary for effective blended learning where else 50% online is the preferred one. However, all these percentages need further confirmation through more in-depth studies.

Both lecturers and students have positive perceptions of blended learning in particular on the flexibility of study time. Students agree they spent more time reading and learning follow by an improvement in time management. But lecturers do face problems of getting students to participate actively in the forum.

Blended learning subscribes to the constructivist learning theory where it is recognized that students can learn and construct their own knowledge when given the right learning environment. Any attempt to equate classroom learning hours to time spent learning outside the classroom will be a futile exercise. This is because a few minutes spent actively in learning are more beneficial than an hour spent sitting passively listening to a lecture. University management has to adopt and accommodate different modes of teaching and learning in order to progress. Blended learning has great potential in turning the table of teaching to student centred approach but it needs the university management blessing for it to bear fruit.

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