Editor's Note: With proper support, transition to blended e-learning can add quality and flexibility to education programs. Well-trained and enthusiastic teachers with excellent resources, technical and administrative support can move programs rapidly into 21st century where learners assume greater responsibility for their own learning and where the teacher can better support individual student needs.

Exploring the affordances and obstacles of blended e-learning pedagogical practices: perspective of Malaysian teachers

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Abstract

In Malaysia, blended e-learning pedagogical practices have made a very rapid penetration into Malaysian schools. However, there is little Malaysian studies on the affordances and obstacles of blended e-learning. This study examines and understands the affordances and obstacles of using Blended E-Learning Practices (BeLPs) and develops change actions that can lead to better use of BeLPs. A total of 27 practicing teachers were involved in this study. A phenomenological perspective was employed for this study. In-depth interviews with participating teachers was carried out to understand their perceptions on the usage of BeLPs. A majority of them agreed that there are many practical advantages to teach and learn using BeLPs. Significant affordances are to encourage active learning, improve motivation, and encourage authenticity and connectedness. This report also revealed the impact of teachers' and students' readiness to blended e-learning, technical infrastructure, support and environments towards the process of implementation of BeLPs.

Keywords: Learning Management System, Moodle, technology integration, educational technologies

Introduction

The integration of Information and Communication Technology (ICT) in education is no longer a new matter in today's sphere. It is an ever-growing effort by many faculties to ensure success by integrating two elements, technology and education, to create more efficient and effective learning. Teaching and learning have been made simpler than ever before by integrating communications media to expand opportunities for interaction between teachers and students at schools in a very advanced way without difficulties, especially with the introduction of blended e-learning.

Blended e-learning pedagogical practices are increasingly more prevalent in Malaysian classrooms. Blended e-learning is accomplished with the help of many different types of applications such as WebCT, Blackboard and Moodle. Integration of ICT becomes easier with those applications. Moodle, for example, a free open source application, is preferred by many teacher educational institutions, universities and colleges throughout Malaysia. ETutor, Claroline, eFront and Joomla are some of the open source applications that have been adopted in teaching and learning.

It is noteworthy that blended e-learning is able to improve student's motivation, achievements and create fun learning (Escobar-Rodriguez & Monge-Lozano, 2012; Katsamani, Retalis, & Boloudakis, 2012; Lu & Law, 2012; Poelmans & Wessa, 2013). In addition, teaching and learning technologies have made the process more flexible and innovative (Vogel & Klassen, 2001; Wong, Pauline & Osman, 2013) and at the same time make lessons more interesting for the learners.

The study

The large-scale introduction of blended e-learning into primary and secondary schools in Malaysia attracted researchers to conduct this research project. There are important pedagogical issues surrounding how teachers can prepare lessons using available software and how they can use the interactive features of the blended e-learning to deliver concepts in ways that can be dramatically more effective. This paper seeks to contribute to the debate about the use of Blended E-Learning Practices (BeLPs) via Moodle as a Learning Management System (LMS) which focuses on particular affordances and obstacles in integrating it in daily teaching and learning.

Unfortunately, blended e-learning practices, especially using Moodle as a tool for collaborative learning, knowledge building and interactive communication, have not been widely implemented in developing countries. It is time to focus on how teachers can exploit the technical interactivity of the use of BeLPs via Moodle to support dialog and interactive media to bring multimodality and interactivity to support teaching and learning. On this basis, finding would highlight affordances and obstacles that can develop better teaching and learning practices by increasing interactivity, collaboration and classroom participation.

In short, the main intention of this study was to understand the benefits and obstacles of teaching via BeLPs with the help of Moodle as a Learning Management System. Knowing best practices for blended e-learning used in schools can facilitate adoption by moving beyond simplistic arguments around whether the new pedagogical practices are 'good' or 'bad' for the transfer of knowledge, skills and attitudes to learners. This study also intends to determine the most effective and efficient ways to provide optimum conditions for improving engagement levels and implementation of BeLPs in daily teaching and learning among students.

Participants and data collection methods

BePLs are a relatively new teaching tool in Malaysian schools. In this regard, a small scale case study was carried out to understand the affordances and obstacles of blended learning practices using Moodle in teaching and learning. Based on recommendations from academicians, this study invited 27 practicing teachers from primary and secondary classrooms who were satisfied two criteria for this study. First, participating teachers must have experience with BePLs for more than one year for teaching and learning in schools. Second, they must be appointed as permanent teachers by the Malaysia Ministry of Education (MoE). Teachers waiting for confirmation were not eligible for this study. These criteria were considered appropriate and relevant for the context of this study. Teacher participation was wholly voluntary. Both open-ended and predetermined interview questions were adopted and/or adapted from previous studies (Escobar-Rodriguez & Monge-Lozano, 2012; Katsamani, Retalis, & Boloudakis, 2012; Lu & Law, 2012). Face and content validities were determined by a five-expert panel before the actual study.

In the data collection process, in-depth interviews were carried out with each of the 27 participating school teachers (11 from Primary and 16 secondary). Five (5) open-ended and two (2) predetermined questions aimed to explore affordances, pedagogical practices and challenges related to teaching with BePLs. Audio recordings were made of these interviews. No video recordings were made throughout this process. Pseudo-names have been substituted for all participants (teachers) through the writing and reporting of the research project. The steps for qualitative data collection and analysis were, thermalizing[1], designing, interviewing, transcribing, analyzing, verifying and reporting (Kvale & Brinkmann, 2008).

[1] Thermalizing is a rigorous design methodology to ensure the research is trustworthy by accurately examining the phenomenon intended for study and by eliminating bias.

Ethical considerations

This study was conducted according to the protocol of the ethical research set by the University and with the approval from the Ministry of Education. Informed consent and confidentiality are important issues. All measures were taken to preserve confidentiality and consent of all participants. Informed consent was given by all participants; there was no deception or secrecy; all volunteer teachers knew they were participants in the research.

The consent process ensured that participating school teachers and those authorized to give consent comprehended the information provided and can made a voluntary choice whether to participate or not. Also, they were able to withdraw at any time. Prior to the research, approval was obtained from the Education Planning and Research Division (EPRD). Upon receiving approval from the EPRD and University to support this research, the head of school was contacted and permission granted before conducting the research. This procedure ensures the research project will not burden, inconvenience or disrupt participants. Researchers strongly believe that student learning is a priority and interaction among them or with their teachers must not be compromised.

The Consent Information Sheet was sent to the participating teachers. This was to ensure participants understood the objectives and structures of this study. The Consent Information Sheet outlined the research title, researchers' information, and objectives and structures of study. It was made available prior to conducting the research. Participating school teachers were requested to sign the consent form and it was collected by the researchers within a week.

Results and discussions

Advantages of Blended E-Learning Practices (BeLPs) in teaching and learning

In the interview, participants were asked to reflect on their experiences with the Blended E-Learning Practices (BeLPs) for teaching and learning among school teachers. The findings highlighted the affordances of Blended E-Learning Practices (BeLPs) for teaching and confirmed the previous studies.

Encourage efficiency and effectiveness

Many of the teachers interviewed saved their teaching materials to hard disk or USB stick and subsequently be revised and reused hem in coming lessons, especially for students who need recall what was taught in the classroom. This adds immediate benefit during the course of the lesson because students can revise or return to earlier explanations for reinforcement purposes by visiting Blended E-Learning E-Learning Practices (BeLPs) website. Indeed, the extra information that has been added during the lesson can act as an invaluable prompt or source of ideas at some future date. A teacher mentioned how she could easily bring the previous saved activities or notes or lesson plans into her current teaching lesson again without any hassles by using Blended E-Learning Practices (BeLPs).

Furthermore, many of the teachers interviewed noted that they could use the Blended E-Learning Practices (BeLPs) website to introduce their teaching lesson. This is because the information uploaded to the website can be used to recall or reflect on what was previously taught at the beginning of the next lesson. Both teachers and learners can use the website address to link to the teaching materials for extra information or concepts. By having these, students not only study based on the entire notes or information or activities provided by teacher but also from related and useful websites. The interviewed teachers agreed that teaching is more fun when students are able to link to their discussions with the latest information from the related websites. Blended E-Learning Practices store information including lessons, student records and progress reports; it saves paper and minimizes physical data storage. It makes the learning process cost efficient, more organised and saves time.

Encourage active learning among students

Many studies have proven that traditional pedagogies are the primary mode of instruction despite a variety of ICT options for optimal student learning (Feden & Vogel, 2003). Interviewed teachers revealed that the majority of teachers opt for passive lecture-discussions rather than an active learning strategy. Knowledge acquired through direct instruction in a typical learning environment leaves students to be passive; interactive classroom practices require more working on individual tasks. Passive learning-teaching pedagogical practices should be changed to suit the current environment and needs of our societies.

Teacher-centered pedagogy is still dominant in developed countries. A study conducted in American classrooms from 1880 to 1990 found that the basic instructional sequences and patterns in high schools, particularly in core academic subjects, have remained teacher-centered (Feden & Vogel, 2003). Similarly, based on an extensive study of schooling by John Goodland in 1983; it was found that "teachers appear to teach within a very limited repertoire of pedagogical alternatives emphasizing their own talk and the monitoring of seatwork which places the teacher very much in control" (1983, 467). It seems difficult to break the cultural norm rooted within the teaching process if no immediate and constant awareness is initiated.

A teacher prompted that having Blended E-learning Practices (BeLPs), students are actively constructing their own understandings and encourage social cooperation with others. Another teacher prompted that after having Blended E-Learning Practices (BeLPs) for weeks, his students have changed in the way they learn. They adopt a more holistic learning style. Before this, they were much more on an additive process for accumulating information. He noted that Blended E-Learning Practices (BeLPs) emphasise bringing about learning more than providing instruction.

The findings from this research are in line with the Bloom's taxonomy concept of learning. By having Blended E-Learning Practices (BeLPs), students are able to achieve higher order thinking skills if compared to the process of transmitting knowledge which only occur through teacher-centered approach. Interviewed teachers also noted that Blended E-learning Practices (BeLPs) based on contemporary cognitive theory encompasses higher order thinking skills, and embrace Dale's *cone of learning* where the active engagement in the learning can help to retain 30% to 90% of knowledge and information.

All interviewed teachers believed that the advancement of technology has shaped changes within the organizational infrastructure; higher levels of learning - creative thinking, problem solving, and decision making - are highly demanded in the present workforce. In conjunction with this, under ideal circumstances, teachers suggest that Blended E-Learning Practices (BeLPs) allow practitioners to match technology, pedagogy, and content to the specific needs of different learners and to the peculiar demands of different contexts.

Thus, the pedagogical decision to incorporate cooperative learning within the context of blended learning is a significant decision where the learning process is based on learning theories and primary studies documenting a positive effect on student performance, motivation and learner autonomy. Interviewed teachers' opinions are in line with Mishra & Koehler (2006).

Encourage motivation in learning

All interviewed teachers have agreed that Blended E-Learning Practices (BeLPs) able to increase the level of motivation among their students. After using BeLPs, students react actively to the classroom environment. This is in line with many previous studies that noted that ICTs could encourage and actsas a motivator and be a power tool in teaching and learning (Escobar-Rodriguez & Monge-Lozano, 2012; Katsamani, Retalis, & Boloudakis, 2012; Lu & Law, 2012; Wong, Sahandri, & Pauline, 2016). One teacher viewed BeLPs able to encourage constructive learning among students, especially interactive via e-forum, e-chat and others synchronous

features. If a certain degree of motivation in students is aroused, there is much potential in gaining more confidence thus unleashing greater possibilities in study. Furthermore, they become active because such learning is inherently interesting or enjoyable.

Another teacher speculated that by blending pedagogical practices, eliciting motivation is highly possible through the use of the power tool (computer) and conventional approach (face-to-face). All of this is possible in establishing positive interdependence among group members as well as individual accountability, where all team members work together to complete common shared goals. As mutual understanding exists within each member, the contribution and recognition given to effort put in can internally encourage such desired motivation (Slavin, 2014).

Based on the Sloan-C Five Pillars by Lorenzo and Moore (2002) for Quality Online Education, blended e-learning has the capability to make education more efficient, cost-effective, accessible, and increase satisfaction. Lajbcyier and Spratt (2007) explored the role of discourse in text-based computer conferencing environments to develop critical thinking and other desirable cognitive skills in learners. Anderson, Rourke, Garrison and Archer (2001) support the idea that learners are able to project themselves socially and affectively into a community of inquiry. Students are allowed to learn in their own way to determine their own path through the material available (Wong, Teo, & Goh, 2014; Wong, Sahandri, & Pauline, 2016). This supports the recent School Based Assessment being practiced in the nation where students depend on a self-paced learning progression where those who excel move up to a level. Thus, the proposed LMS/Virtual Learning Environment (VLE) will facilitate learning and help teachers to track, monitor, document and allow students' assessment to be more organised and manageable.

Encourage learner autonomy and self-directed studying ability

Many interviewed teachers indicated that BeLPs is able to increase level of learner autonomy and a self-directed studying ability. They found that after integrating BeLPs, their students were able to acquire subject consciousness and self-awareness which stimulated passion, enthusiasm, and giving increased effort in initiating one's own learning process. Additionally, one of the interviewed teachers voiced out that from a humanistic point of view, the primary function of education is to assist learners to develop individuality and help them to realize the potential that already existed within them. This is in line with Liu's (2012) view point.

The findings of this study also support the outcomes of Benson (2001). Benson distinguished six approaches to assist development of learner autonomy which incorporates resource, technology, learner, teacher, classroom and curriculum-based approaches. Resource-based approaches emphasize the independent interaction of students with the learning resources where learners choose their own educational materials evaluate their own language progress. Meanwhile, technology-based approaches are interconnected with the use of computers, specifically internet, where learners interact closely with educational technologies. This approach is another basic exemplar that supports the integration of blended learning within study, making it relevant to the current needs in language learning. Another approach to assist development of learner autonomy is the learner themselves. Through a learner-based approach, students view the process of learning through reflection on learning materials and activities. Finally, with regard to teacher, classroom and curriculum based approaches; students are free to decide on their own learning content and sequence within a collaborative and supportive environment.

Many of the teachers interviewed revealed that the effectiveness of online resources to develop learner autonomy, involving innovative treatment in the form of a online resources, not only contributed to larger pronunciation gains but in fact produced more autonomous learners. Learning autonomy involves directing learners to take full responsibility for their own learning. A teacher's role is to facilitate the process by guiding the students in what is meaningful, and how and when to utilize it in creating a purposeful learning atmosphere.

Challenges in implementing blended e-learning practices (BeLPs) and corrective suggestions

Few pedagogical challenges were noted for using Blended E-Learning Practices (BeLPs) in teaching and learning in this study based on teachers' point of views. Among them were teachers' and students' readiness, technical infrastructure and support, and environment.

Teacher and student readiness

A growing body of research suggests that effective and efficient practices for preparing teachers to use technology were a vital determinant in the process of technology integration in teaching and learning. Using Blended E-Learning Practices (BeLPs) requires both new approaches to pedagogy and professional development for teachers. Successful integration of any technology into the classroom requires more than simply acquiring that technology. Having that, proficiency in developing and integrating Blended E-Learning Practices (BeLPs) has therefore been widely considered by interviewed teachers.

Indeed, the introduction of the Blended E-Learning Practices (BeLPs) does not in and of itself transform existing pedagogies (Wong, Teo, & Goh, 2013, Azli, Wong & Noraini, 2016; Wong, Sahandri, & Pauline, 2016). Blended E-learning Practices (BeLPs) requires an investment of time, and some degree of training. Various articles and reports have highlighted the impact of low teacher confidence with ICT and how it hinders usage of information and communication technology tools for teaching and learning. All interviewed teachers agreed that teaching staff lacking in subject matter skills may also lack methodological proficiency, so that integration of blended e-learning pedagogical practices will add existing burdens to them (teachers).

With regard to training interviewed teachers serving in highlighted schools should conduct training on a regular basis. This weill enable experienced teachers to share their knowledge and skills in the use of Blended E-Learning Practices (BeLPs) with novice teachers. Furthermore, one of the teachers voiced that the successful introduction of blended learning in a school needs strong and enthusiastic leadership from the head of the school in order to achieve higher confidence and belief in the use of new blended pedagogical practices. One teacher voiced that barriers that hold teachers from integrating technology into the classrooms are lack of access to computers and software, insufficient time to plan instruction, inadequate technical and administrative support, negative beliefs or ignorance about teaching and computers, established classroom practices, and unwillingness to change. Even if a school had enthusiastically participated in the reform effort to integrate technology in education, curricula, instruction and assessment should be interrelated to each other in making it a success.

In the Malaysian schools, especially in the rural areas, lack of knowledge and skills in the use of Blended E-Learning Practices among students could be the main barrier to success in implementation of the new pedagogical practices. Students should be informed on the benefits of using blended e-learning and understand its actual benefits. Encouragement from teachers and head of school is vital in ensuring that they (students) are conscious why they need to use blended e-learning.

Self-directed e-learning is not likely to be successful for students who are not be able to handle independent learning throughout the course. Interviewed teachers contended that in fact, some learners who lack the skills of independent learning may find this difficult and become confused. Many will still need guidance and support from teachers to use blended e-learning in their daily learning. Another teacher noted that not all students are able to appreciate flexibility and freedom offered by the Web and human factor is therefore inevitable. Even worse, students might feel isolated, lack of motivation, or lack of support and feedback if blended e-learning instruction is to be implemented without proper planning and support.

Training for the head of school is vital to ensure that they understand the advantages of using technologies in teaching and learning. Sufficient information and knowledge among the head of school, administrators and teachers will give extra points to solve problems, provide support, and give feedback or guidelines for teachers and students. Since benefits of ICT in education are undeniable, if it is used to its fullest potential, it will open up opportunities to create indispensable learning autonomy and flexibility in the new classroom.

Interviewed teachers suggested that pre-test and post-test are essential in blended training programs. The pre-test would benefit the programs in that it could instill better plan for the Blended E-Learning Practices training content preparation, especially papers related to technology integration, instead of replicating knowledge and skills the students already possess. By identifying teachers' needs, the blended training programs will be more beneficial to teachers. Also, the post-test might be able to indicate the effectiveness and efficiency of the technological in-service teacher development programs. Furthermore, the training programs for teachers or other professional development courses should not focus only on providing teachers with knowledge to design, use and integrate Blended E-Learning Practices. They should include more affective (attitude) and psychomotor (skills).

Technical infrastructure and support

Interviews noted that, especially in the early implementation stage, teachers might resist integration of Blended E-Learning Practices (BeLPs) if they are having difficulties in the use of the new technologies for teaching and learning. Arising from this barrier, technical support has become vital to encourage them to keep trying. On-site technical support is responsible for troubleshooting and assistance for the technology and lessons. Increased use of technology in the school requires a robust technical infrastructure and adequate technical support. If teachers are working with a technology infrastructure that realistically cannot support the work they are trying to do, they will become frustrated and turn back to the conventional teaching tools such as blackboard or flash cards. Teachers also must have access to on-site technical support personnel who are responsible for troubleshooting and assistance after the technology and lessons are in place. Based on Wong, Osman, and Goh (2012) findings, technical support in implementing computers in teaching and learning became a very significant factor among users.

Besides that, many interviewed teachers have voiced out that the number of computers in their school computer labs was insufficient. Lack of equipment could be construed as a barrier for teachers and students in using of Blended E-Learning Practices or attempting to integrate them in creative and innovative ways.

Conclusions

The overall views of the participating school teachers were extremely positive about the use of Blended E-Learning Practices (BeLPs) in teaching and learning. All of those who were part of this study reported a considerable enthusiasm for the Blended E-Learning Practices (BeLPs) and argued that the nature of their teaching had changed since the introduction of BeLPs. These summarized that teaching with new digital tools will enhance teaching and learning in the digital age. It is important to realize that using the BeLPs on its own will not provide any magic solutions, nor should teachers feel obliged to use the blended learning in every part of a lesson, or indeed in every lesson. Sometimes the blended learning pedagogical approaches might only be used for a starter or a plenary.

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