Investigation of the Support Factors to Blended Learning Courses: The Learners Perspectives

Pradit Songsangyos[1], Arkhom Songkroh[2]

[1]Faculty of Science and Technology, Rajamangala University of Technology Suvarnabhumi
Pranakhon Si Ayutthaya, Thailand
e-Mail: pradit.s@rmutsb.ac.th
[2]Faculty of Business Administration and Information Technology, Rajamangala University of Technology Suvarnabhumi
Pranakhon Si Ayutthaya, Thailand
e-Mail: arkhom.s@rmutsb.ac.th

บทคัดย่อ—จากงานวิจัยของ Parra J. L. (2013) พบว่าหลักสูตรเรียนรู้แบบผสมผสานมีผลสัมฤทธิ์ทางการเรียนรู้เฉลี่ยสูงกว่าการเรียนการสอนในห้องเรียนหรือการเรียนรู้ออนไลน์เท่านั้น หากมหาวิทยาลัยมีแนวโน้มที่จะนำหลักสูตรการเรียนรู้แบบผสมผสานมาใช้ในเพื่อแข่งขันกับมหาวิทยาลัยอื่น ๆ ก่อนการดำเนินการควรทำการสำรวจปัจจัยที่สนับสนุนการเรียนรู้แบบผสมผสาน ประชากรในการศึกษาครั้งนี้คือ นักศึกษาระดับปริญญาตรีของมหาวิทยาลัยเทคโนโลยีราชมงคลสุวรรณภูมิในภาคการศึกษาแรกของปีการศึกษา 2015 ประชากรจะถูกแบ่งออกเป็นกลุ่มตามคณะ โดยสุ่มตัวอย่างแบบเจาะจงกับคณะบริหารธุรกิจและเทคโนโลยีสารสนเทศและคณะวิทยาศาสตร์และเทคโนโลยี จากนั้นทำการสุ่มตัวอย่างอย่างง่าย เครื่องมือที่ใช้ในการวิจัยเป็นแบบสอบถามซึ่งประกอบด้วยคำถามแบบปลายปิดและแบบปลายเปิด และมีการดำเนินการสัมภาษณ์ในเชิงลึกกับนักศึกษาเพื่อสำรวจความคิด คำแนะนำและความคิดเห็นของผู้เรียน มีผู้ตอบกลับแบบสอบถามจำนวน 276 ราย จากคำถามปลายเปิดและการสัมภาษณ์ผู้เรียนได้ข้อสรุปดังนี้ มหาวิทยาลัยควรสนับสนุนพวกเขาโดยการฝึกอบรมเพื่อการพัฒนาในด้านคอมพิวเตอร์และการใช้งานอินเทอร์เน็ตตลอดจนทักษะภาษาอังกฤษ โครงสร้างพื้นฐานด้านเครือข่ายคอมพิวเตอร์ในมหาวิทยาลัย ความยากของเนื้อหาการเรียนการสอนและเวลาการใช้งานสำหรับการเรียนรู้แบบออนไลน์ที่เหมาะสมเป็นสิ่งที่ควรได้รับการพิจารณา

คำสำคัญ: ปัจจัยสนับสนุนการเรียนรู้แบบผสมผสาน การเรียนรู้แบบผสมผสาน หลักสูตรการเรียนแบบผสมผสาน

***Abstract*—**The study of Parra J. L. (2013) mentioned that blended learning courses have an average achievement higher than teaching and learning in the classroom only or online learning alone. If a university tends to adopt blended learning courses to compete with other universities. Before the implementation of the blended learning, the investigation of the support factors to blended learning courses should be conducted. The population in this study were undergraduate students of the Rajamangala University of Technology Suvarnabhumi in the first semester of the academic year 2015. The multi-stages sampling was obtained. So the population is divided into groups that are assigned by the faculties. Then the purposive sampling was obtained to faculty of business administration and information technology, and faculty of science and technology. Next a simple random sampling was obtained. The research instrument was the questionnaire, and it consists of both closed-ended, and open-ended questions. Besides, an in-depth interview was conducted with the students, for exploration of their ideas, recommendations, and comments. From open-ended questions and interviews, learners were concluded as follows. The university should be support them by the training to an improvement of their computer and Internet usage, and English language skill. The computer network infrastructure in the university, the difficulty of the course contents and the suitable online learning usage time should be concerned.

Keywords- Blended Learning's Barriers; Blended Learning; Blended Courses

I. INTRODUCTION

Currently, a world of technology-driven innovation is continuously and rapidly growing. This is apparent especially in the information and communication technology-related pedagogical practices at all educational levels, which is very important in the 21st century. People can learn anytime and anyplace. However, many people face obstacles when they first use online tools for collaborative learning or social media to support collaborative work. When blended courses have the

average achievement higher than teaching and learning in the classroom only or online learning alone [1].

Rajamangala University of Technology Suvarnabhumi (RMUTSB) is located in the central region of Thailand. There are four campuses in 3 provinces. Presently, some teachers used online learning as supplementary of their courses. If RMUTSB decided to adopt blended learning for the courses in the university, to compete with other universities in Thailand or international universities from Asian Economic Community (AEC) by the end of the year 2015. While online learning through social media, Facebook cause mobile equipment and social media become useful and fashionable not only for everyday life but also in education. Many pieces of research surveyed the adoption of blended learning. By the way, before the implementation of the blended learning, it should be investigated the supported factors and barriers to blended learning.

The aim of this survey research is the investigation of the supported factors to blended learning courses. The participants for this study were the undergraduate students in the Rajamangala University of Technology Suvarnabhumi.

II. Literature Reviews

Bruner, Vygotsky, and Piaget discusses the philosophy of human learning is done through the interaction between them. The students who pass the online often feel isolated, without social interaction. In addition, lack of direction, as well as technical skills, may eventually affect to drop off students' motivation. Working in a collaborative blended learning, will increase achievement and skill of students, as group work in a real life. Blended courses have the average achievement higher than teaching in the classroom only or online learning alone [1].

The first step in designing the research is to identify the research purpose. The second step is the design of the questionnaire. Next, the study was conducted for the samples of learners and teachers and analyzed of the respondents. Three groups of 15 learners from the automotive, manufacturing, welding and refrigeration courses have been taught by three methods as follows: Group 1 - the traditional classroom lectures and laboratory sessions; Group 2 - classroom teaching including supervised computer simulation; Group 3 - Unsupervised CAD tutorials and supervised CAM-CNC computer simulation. The agreement and disagreement of each answer were calculated by the summation of frequencies and summation of percentages of positive, negative perceptions, and undecided. Blended learning methods are considered to be a better by teachers and learners. Integration of computing resources results in better planning, delivery and enhances interaction in the classroom. The assessment process is much more consistent when computer assisted process are used. The conclusion of this study is given as following. The computer as a medium of instruction can be integrated teaching with traditional teaching methods for more effective teaching and learning process. Teachers feel that although there are some issues with the delivery of blended learning, blended learning model offers many advantages in planning lectures and learner assessment. By the way, learners feel that blended learning has many advantages for them and very positive on all aspects of blended teaching and learning mode [2].

e-Learning has become a standard in many organizations to train its workforce and build an information network that encourages collaborative knowledge sharing. As a result of technological and global factors, the complexity of delivering successful e-learning courses and products is an increasing challenge for subject matter experts and instructional designers. Online training courses have become blended learning environments, include synchronous and asynchronous delivery modes, multiple media forms, and localized and globalized audiences of it afford to meet the demands and flexibility. Successful blended learning is more than just mixing of an online and live instructional modes; it also includes a combination of multiple media types and technologies and communication modes. E-learners have become multimodal learners, with the ability to adapt to multiple media forms, environment types, and tools. Blended learning presents a number of challenges for subject matter experts and designers of instructional content. Subject matter experts must consult with instructional designers and consider the different media platforms, environments, and formats that optimize the best pairing of content with delivery mode and media type. Content experts and designers must collaborate on methods of effectively adapting course content to account for perceived richness, user experience, and task complexity. Teachers must also invest additional time in planning and accounting for user preferences and communication practices in online training [3].

III. Research Methodology

The study is a survey research. The proposed of the study is, to investigate the supported factors to blended learning courses in the learners' perspective.

The research instrument was the questionnaire. The questionnaire consists of both closed-ended, Likert 5 scales, and open-ended questions, for exploration of the respondent ideas.

The scales were classified into five levels, which are summarized the score in the form of interval scales [4] as follows:

Very high	5	points
High	4	points
Moderate	3	points
Low	2	points
Very low	1	point

The population in this study were undergraduate students who studied in the RMUTSB, in the main campus and Wasukri campus in Pranakhon Si Ayutthaya province, in the first semester of the academic year 2015. The population is divided into groups that are assigned by the faculties. Then the purposive sampling was obtained to faculty of business administration and information

technology, which has the largest number of students (Social Science), and faculty of science and technology, which has the smallest number of students (Science and Technology). Next a simple random sampling was obtained to the students of these faculties.

After creation of the questionnaire, then the suitability of the questionnaire was evaluated by 3 experts. Based on recommendations from the experts, some questions were re-written to ensure the understanding of the respondents. Next reliability test was done with revised questionnaire, then distributed to the sample groups. An in-depth interview was conducted with 7 learners, for exploration of their ideas, recommendations, and comments. The data were collected from 276 learners at RMUTSB who return the questionnaires including; 189 learners from faculty of business administration and information technology, and 87 learners from faculty of science and technology, respectively. Collected data then analyzed using statistical software. The statistical techniques include arithmetic means, standard deviation.

IV. Results

There were 276 learners who return the questionnaires. The results of the study has shown in table I.

TABLE I. THE SUPPORT FACTORS TO BLENDED LEARNING COURSES: THE LEARNERS PERSPECTIVES

Descriptions	Percentage				
	1	*2*	*3*	*4*	*5*
1.Computer theoretical background	-	-	21	51	28
2.Computer peripherals operational skill	-	1	18	56	25
3.Foreign language skill	2	9	47	27	15
4.Difficulty of the course contents	1	3	29	50	17
5.Ease of portability for the online learning equipments	1	2	25	48	24
6.Online learning usage time	1	4	32	47	16
7.Sending and receiving speed of the Internet	1	7	25	46	21
8.The Internet coverage area	2	7	27	46	18
9.The reliability of the Internet connection	1	7	29	49	14
10.Expenditure for the computer and peripherals	1	3	26	51	19
11.Expenditure for the Internet usage	1	3	27	48	21

The students' opinions about support factors to the blended learning courses were as follows. Their computer theoretical background and computer peripherals operational skill were at a high level of 51 percent and 56 percent respectively. When foreign language skill was at a moderate level of 47 percent. The difficulty of the course contents was at a high level of 50 percent. So the teachers should be concerned about the course contents and level of the learners' background. While ease of portability for the online learning equipment was at a high level of 48 percent. Their online learning usage time was at a high level of 47 percent. By the way, they felt the university infrastructure need to be improved to support the teaching and learning. The speed of the Internet, its coverage area, and the reliability of the Internet connection were at a high level of 46 percent, 46 percent, and 49 percent respectively. Lastly, the expenditure was at a high level not only for the computer and peripherals but also the Internet usage for 51 percent, and 48 percent respectively. Then the infrastructure will be one of the barriers to the blended learning.

From open-ended questions and interviews from the learners concluded as follows. If the university can support them by the training to improvement of their computer and Internet usage, and English language skill, these will be very helpful for their proper needed background. The computer network infrastructure in the university to support the blended learning should be considered. Furthermore, the implementation of blended learning should be concerned about the difficulty of the course contents and the suitable online learning usage time for the whole courses.

V. Conclusions and Recommendations

Due to blended courses have the average achievement higher than teaching and learning in the classroom only or online learning alone. Before the implementation of the blended learning, the investigation of the support factors to the blended learning courses should be conducted. The participants for this study were the undergraduate students in the Rajamangala University of Technology Suvarnabhumi.

From open-ended questions and interviews, learners concluded as follows. The university should be supported them by the training to an improvement of their computer and Internet usage, and English language skill. The computer network infrastructure in the university, the difficulty of the course contents and the suitable online learning usage time should be concerned.

For further study, the investigation can be explored to both teachers and learners. The barriers to the blended learning courses should be concerned, then synthesized and recommend the problems solving. In addition, the interviews from the experts should be included in the study as well.

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