Effectiveness of Moodle E-learning for Student Enrolment of GENL 1101 Learning Resources and Skills at Asia-Pacific International University

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ABSTRACT

The objectives of this study were: 1) to find out learners' satisfaction in using the Moodle program for their study; 2) to compare the individual factors of learning and teaching in the classroom through the Moodle system; 3) to apply the results of the study as a guideline for development of decision-making for whether to choose the blended learning model using Moodle e-learning.

A sample group of 103 students' enrolment of GENL 1101 Learning Resources and Skills at Asia-Pacific International University was selected from three fields of study: English, Business and Nursing. A survey questionnaire was specifically designed to collect data from the sample. Frequencies, percentages, means, standard deviations, t-tests, and one way ANOVA were utilized for data analysis. The finding showed a moderate level of satisfaction with the effectiveness of the Moodle e-learning medium. Teaching in the classroom found a high level score of satisfaction.

In comparing personal factors of the students by their gender and age, concomitant differences in the satisfaction levels were not exhibited. However, students within different fields of study, manifested associated differences at the statistically significant level of $p < 0.05$ in the satisfaction with Moodle e-learning in their classroom. This study showed motivation of learning both in and out of the classroom, was benefited by the use of the Moodle program.

Keywords: Moodle, e-learning, teaching, learning, satisfaction.

INTRODUCTION

Classroom management with a large number of students makes it difficult for the instructor to reach individual learners. Classroom discussions are not sufficient to meet the needs, especially for the general basic courses that include different fields of study. The teachers and the students may have limited time to meet in a classroom but this will not happen when using blended teaching and learning via an electronic system: Moodle to assist in teaching and learning emphasizing the learners' needs. As for the instructor, he or she introduces and creates the lessons according to the content of that course to be in line with the objectives of the lesson

plans. The teaching method using Moodle will help students to study the content on their own at any time, both in the classroom and outside of the classroom, be able to interact, exchange ideas including inquiring about various problems with classmates and instructors through electronic communication at any time. As for the instructors, they can present the content, exercises, and quizzes, as well as updating the content to make it more interesting via Moodle for the learners, without the necessity to use the lecture method of teaching extensively. Consequently, lecturing time with the lecturer in the class can be used for other purposes to the maximum benefit. There is a wide variety of learning and teaching opportunities opened within this economic era and digital society according to the strategy of digital development planned for the economy and society. Digital technology impacts the lifestyle, work, education and learning. Therefore, there should be some adjustments for a new paradigm, creation of increased opportunities for access and equality in education, to provide improved quality and effective education in response to educational needs in this technological and digital society. These can be accessed without the limitations of space, distance, duration, format or educational system in accordance with the new learning environment, and the learning behavior of the students of the Thailand 4.0 era. Asia-Pacific International University saw the importance of teaching and learning through electronic media that led to the introduction of using Moodle to help manage the teaching information system of courses such as setting, submitting, and assessing assignments, creating test papers, online testing, lesson improvements as well as studying lesson content before entering the classroom. During the course of teaching and learning through the Moodle system, the monitoring capability allows the instructors to be aware of individual learning behaviors and provide timely help to the students, especially those in the at-risk group.

Therefore, the classroom problems of having a crowded classroom, accessing the individual learners, and assessing the level of being at-risk learners, prompted the researchers into studying the blended teaching style by using electronic media through Moodle, to find out the level of success of the students and their satisfaction with learning through Moodle as an electronic media. By comparing the level of satisfaction by their age from the GENL1101 Learning Resources and Skills' course, and guidelines for development in the study, the results will be important in the decision making of the teachers to use e-learning with electronic media and multimedia to stimulate the learners to use this technology in their education and also, promote more modern teaching methods amongst teaching faculty.

Research Objectives

1. To study the level of the learners' satisfaction with blended teaching in the classroom using electronic media via Moodle.

2. To compare the difference between the aspects of individuals and the effectiveness of the learners involved with the blended teaching model, using electronic media via Moodle.

3. To bring the results of the study into discussion as a guideline to develop the decision making of faculty about using the blended learning model, and using electronic media via Moodle.

LITERATURE REVIEW

Anut Rattanathirakun (2015) wrote in his book Installing and Managing E-learning Systems with Moodle that Moodle has been widely popular in the educational system of Thailand being commonly used in both public and private organizations. MOODLE (Modular Object Oriented Dynamic Learning Environment) is an open source software system that is used for Course Management Systems (CMS), referred to as a Learning Management System (LMS) or Virtual Learning Environment (VLE),—which is a system that helps to organize teaching and learning activities online on the Internet or the World Wide Web by establishing a website management system that supports both administrators, instructors and learners with tools to help organize the sources of knowledge, the pedagogical activities, and the learning environment through the web effectively. There are many levels in determining the role of the users. They are:

1. The administrators who have the highest position in the system and they can set various values in the system and add the users to the system.

2. The teachers who are responsible for the subjects taught, such as uploading teaching materials into the system—information content, discussion boards or forums, interactive projects or simulations, setting assignments, grading and other configurations involved in the courses assigned.

3. The students who are the least qualified persons in each subject and are able to study the content uploaded by the course lecturer to complete the learning activities, assignments, and tests as assigned by the teacher.
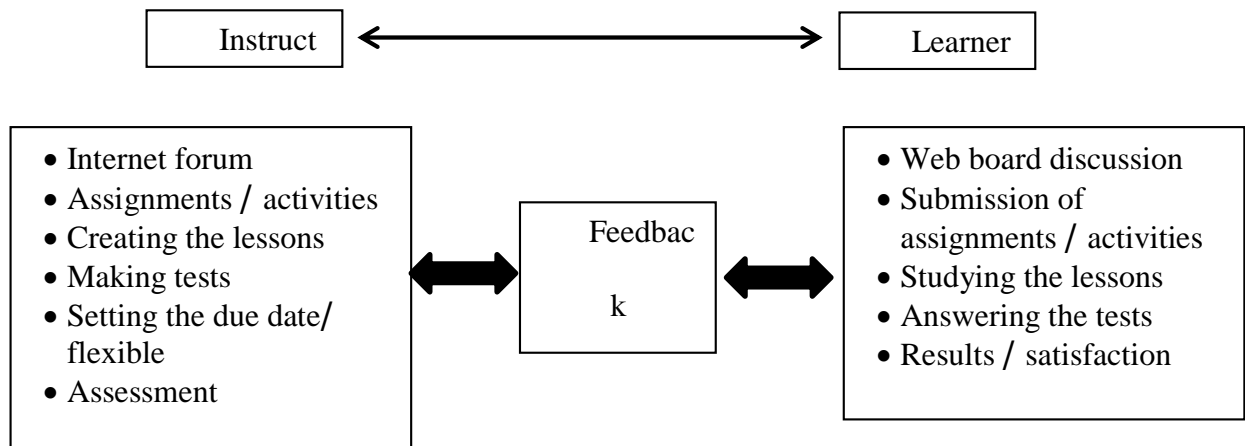
Research in learning and teaching with the e-learning environment through the Moodle system by using study skills and content in the fields of technology, mathematics and science found that the environment of the digital technology era (including audio, animation, and games that

connected with the Internet) encouraged the students and teachers to learn through automated data usage tools. From this environment, it continued to develop further in the teaching process and encouraged the teachers and the students to participate in the activities. The teachers are free to modify the additional content or use existing tools as needed. Therefore, the teachers have an important part in developing these tools to be more interesting in improving the teaching and learning process for the learners to gain the knowledge, the ability to learn effectively, and the encouragement for them to complete daily learning activities both inside and outside of the classroom (Kotzer & Elran, 2012). The research of Arjsup, Khankham and Sittipoommongkol (2015) also found that teaching and learning methods through electronic media were significantly better than the traditional teaching and learning methods. Students were satisfied with teaching and learning through electronic media and teaching media at a high level. The method of teaching through electronic media is therefore an option for students to review the lesson on their own. Pacemska, Pacemska, and Zlatanovska (2012) indicated that the creation of the teaching and learning through the e-learning system resulted in a quality learning environment. In using technology, the willingness to learn increased, and the motivation of using technology, especially by the teachers, as they can improve the learning experiences of students through Moodle, resulted in quality learning. The supports from the university were found to encourage the teachers and the students to communicate online during the teaching with in-depth knowledge, for successful personal learning, which is consistent with the research that helps to see individual differences. Different levels of learning experiences and the role of technology in the university in the context of using Moodle, brings the benefits of these tools to the broader development of the process of organizing the educational process in this digital society.

From research on the use of the e-learning Moodle@UA platform, by the Portugal university researchers (Costa, Alvelos & Teixeira, 2012), it was found that many of the standard Moodle tools had been incorporated by the University of Alveiro such as "Assignments, Chats, Forums, News and Quiz/Survey" (p. 342). A number of external tools such as "Blogs UA, Wikis UA, Questionnaires and Video-conference" (p. 342) were utilized. The analysis of the 278 student respondents' answers regarding the use of Moodle@UA, revealed that the downloading of learning materials, news and the delivery of assignments, were the most mentioned functions. bulletin board and assignments. The media most commonly used were textbooks and slides. Before using Moodle tools, it needs to be recognized "that the successful use of e-learning platforms in the teaching and learning context critically depends on the teachers having

knowledge about the tools, being aware of how they should be used and being capable of organizing all the communication process" (Costa, Alvelos & Teixeira, p. 342). For the future of education, it is important to carefully analyze the fundamental reasons for using e-learning tools in educational institutions to ensure success within the teaching and learning environment

Conceptual Framework

Instruct	⟷	Learner

| • Internet forum
• Assignments / activities
• Creating the lessons
• Making tests
• Setting the due date/ flexible
• Assessment | ⟷ Feedback ⟷ | • Web board discussion
• Submission of assignments / activities
• Studying the lessons
• Answering the tests
• Results / satisfaction |

METHODS

For this research study, the researchers conducted the research according to the following procedure.

The population and sample

The population groups are the undergraduate students of Asia-Pacific International University enrolled in GENL 1101 Learning Resources and Skills' course for the first semester of the academic year 2018 and sample groups are derived by the purposive sampling method in total numbering 103 students.

Research variables

 The chosen research variables of this study are of two types. The Independent Variables are the learners' data; gender, age, and field of study. The Dependent Variable is the technical satisfaction with Moodle which is divided into eight issues:

Easy access to Moodle.

Technique for using Moodle is not complicated.

There is convenient communication between the instructors and the learners, making teaching and learning easier to understand.

The students are able to learn ahead of time and review it at any time.

The submission of work, doing a test and checking the grade is not complicated.

There are channels provided to search for more information.

This system should be a good choice because the instructors can evaluate students who have problems in learning.

This system should be applied to students in other courses.

Data collection

The researchers used questionnaires as a tool for data collection, creating quantitative research questions to study the level of satisfaction in teaching and learning through electronic media using Moodle, and through the techniques that uses Moodle by means of Moodle with independent variables and dependent variables in statistical correlation. This questionnaire was developed from the evaluation form of the instructors at Asia-Pacific International University, related research (Arjsup, Khankham & Sittipoommongkol, 2013) and the research of Kulaya Charoenmongkhonwilai (2017), by ranking the closed-ended questions in order for the respondents to choose the answers that correspond to the reality of the respondents the most. The content of the questionnaire was tested and resulted in a validity index of 0.8 or more which is considered acceptable.

Data analysis

The analysis of the data using ready-made programs to process data and interpreted statistics used according to the data characteristics and objectives of the study as follows:

The analysis of the personal data of the respondents; gender, age and the courses using frequency and percentage as statistical tools.

The analysis of satisfaction levels of using Moodle by means $(\bar{x})$ and standard deviation (SD) by setting scoring criteria within the range of the rating scale; very high, high, moderate, low, and very low using the same average criteria for all levels (Srisaat, 1992, p. 100) as follows

Average 4.21 - 5.00 means the highest level

Average 3.41 - 4.20 means a high level

Mean 2.61 - 3.40 means moderate

Average value 1.81 - 2.60 means low level

Average 1.00 - 1.80 means the lowest level

The analysis of the differences between their satisfactions on using Moodle based on their gender, age and field of study using t-test and one-way ANOVA. In the case of having data with statistically significant differences, Scheffe's Method will be used to examine pair-wise comparison.

RESULTS

Table 1 General Data Analysis of Respondents

General Information		Number	Percentage
Sex	Male	18	17.5
	Female	85	82.5
Age	15- 19	38	36.9
	20- 25	65	63.1
Field of Study	English Department	32	31.1
	Business Administration	6	5.8
	Nursing Department	63	61.2
	Missing	2	1.9

From Table 1, the results of the general data analysis were that most respondents were female (82.5 %), aged from 20-25 years old (63.9 %), and studying in the nursing department (61.2 %).

Table 2 Technical Satisfaction Analysis using Moodle

Options	$\bar{x}$	S.D.	Level
1. Easy access to Moodle.	2.79	0.91	Moderate
2. Technique for using Moodle is not	2.40	0.85	Low
complicated.	3.09	0.79	Moderate
3. There is convenient communication between instructors and learners, making it easier to understand.	3.23	0.84	Moderate
4. The students are able to learn ahead of time and review it at any time	2.67	0.82	Moderate
5. The submission of work, doing a test and checking the grade is not complicated.	3.33	0.92	Moderate
6. There are channels or options provided to search for more information.	3.48	0.78	High
	3.40	0.89	Moderate

7. This system should be a good choice because the instructors can evaluate students who have problems in learning 8. This system should be applied to students in other courses.			
Total average	**3.10**	**0.29**	Moderate

From Table 2, the study of the satisfaction of teaching and learning through electronic media with Moodle, when the questions are analyzed individually, it is found that the technique of using Moodle as a whole has a moderate level of satisfaction (3.10) and has a highest level of technical satisfaction of using Moodle regarding 'This system should be a good choice because the instructors can evaluate students who have problems in learning' (3.48, high) and the lowest level of satisfaction with the questionnaire item 'The technique of using Moodle is not complicated' (2.40, low). Since all other item responses indicate moderate satisfaction this result suggests the immediate institutional focus should be on supporting students in dealing with the perceived 'complexity' of the system. Perhaps by providing answers to frequently asked questions (FAQs) in an accessible online text format, and/or help desk access by chat mode. The students preference should be determined so as to inform research based decision making by managers. However, since moderate satisfaction is not acceptable exemplary practice and learning is 'core business', the institution needs to provide additional resourcing for faculty members and students. Faculty members require continuing professional development in e-learning pedagogies, to improve lecturers' course design; understanding mentoring, offering supportive modelling; and monitoring of implementation to ensure higher performance.

Table 3 **The Results of Comparison of Gender Differences and their Level of Technical Satisfaction using Moodle**

Satisfaction with the Use of Moodle	**Gender**	**x̄**	**S.D.**	**T**	**p**
1. Easy access to Moodle.	Male	2.00	0.93	-2.15	0.34
	Female	2.48	0.82		
2. Technique for using Moodle is not complicated.	Male	2.77	1.11	-0.09	0.92
	Female	2.80	0.87		
3. There is convenient communication between instructors and learners, making it easier to understand.	Male	3.22	1.06	0.73	0.46
	Female	3.07	0.73		

4. The students are able to learn ahead of time and review it at any time	Male	3.33	0.97	0.55	0.58
	Female	3.21	0.81		
5. The submission of work, doing a test and checking the grade is not complicated.	Male	2.72	0.95	0.29	0.77
	Female	2.66	0.80		
6. There are channels or options provided to search for more information.	Male	3.61	0.97	1.37	0.17
	Female	3.28	0.90		
7. This system should be a good choice because the instructors can evaluate students who have problems in learning.	Male	3.61	0.91	0.75	0.45
	Female	3.45	0.75		
8. This system should be applied to students in other courses	Male	3.50	0.85	0.48	0.63
	Female	3.45	0.90		
Total Average	Male	3.10	0.35	0.84	0.40
	Female	3.04	0.27		

*p≤0.05

From Table 3, the results of comparing the overall level of technical satisfaction using Moodle by gender different learners was that the males and the females have the same levels of satisfaction in using Moodle (moderate). Also for each of the items no gender difference was confirmed.

Table 4 Comparison of Age and Technical Satisfaction with Moodle

Satisfaction with using Moodle	Age	$\bar{x}$	S. D.	T	p
1. Easy access to Moodle.	15- 19	2.46	0.96	0.50	0.61
	20- 25	2.37	0.80		
2. Technique for using Moodle is not complicated.	15- 19	2.79	0.99	-0.05	0.95
	20- 25	2.80	0.87		
3. There is convenient communication between instructors and learners, making it easier to understand.	15- 19	3.03	0.79	68.0-	0.49
	20- 25	3.14	0.81		
4. The students are able to learn ahead of time and review it at any time	15- 19	3.24	1.05	0.03	0.97
	20- 25	3.23	0.70		
5. The submission of work, doing a test and checking the grade is not complicated.	15- 19	2.62	0.89	44.0-	0.65
	20- 25	2.70	0.79		
6. There are channels or options provided to search for more information.	15- 19	3.24	1.05	86.0-	0.39
	20- 25	3.40	0.84		
7. This system should be a good choice because the instructors can evaluate students who have problems in learning.	15- 19	3.58	0.86	0.93	0.35
	20- 25	3.43	0.73		

	15- 19	3.44	0.98		
8. This system should be applied to students in other courses	20- 25	3.38	0.84	0.34	0.73
	15- 19	3.05	0.33		
Total Average	20- 25	3.06	0.26	07.0-	0.94

*p≤0.05

From Table 4, the results of the study of the level of technical satisfaction with Moodle which are classified according to the different age of the students found that the overall level of technical satisfaction of using Moodle is not different, but is only in the moderate range.

Table 5 **The Result of the Comparison between their Field of Study and Satisfaction Levels with the Use of Moodle**.

Questionnaires	Source of Variance	S.S.	df	M.S.	F	p
1. Easy access to Moodle.	Between the Groups	.865	2	.433	.587	.56
	Within the Group	71.495	97	.737		
	Together	72.360	99			
2. Technique for using Moodle is not complicated.	Between the Groups	.908	2	.454	.535	.59
	Within the Group	83.131	98	.848		
	Together	84.040	100			
3. There is convenient communication between instructors and learners, making it easier to understand.	Between the Groups	.795	2	.398	.607	.55
	Within the Group	64.215	98	.655		
	Together	65.010	100			
4. The students are able to learn ahead of time and review it at any time	Between the Groups	4.808	2	2.404	3.519	.03*
	Within the Group	66.954	98	.683		
	Together	71.762	100			
5. The submission of work, doing a test and checking the grade is not complicated.	Between the Groups	1.102	2	.551	.784	.46
	Within the Group	66.786	95	.703		
	Together	67.888	97			
6. There are channels or options	Between the Groups	8.285	2	4.142	5.209	.01*

provided to search for more information.	Within the Group	77.933	98	.795		
	Together	86.218	100			
7. This system should be a good choice because the instructors can evaluate students who have problems in learning.	Between the Groups	.026	2	.013	.020	.98
	Within the Group	60.661	96	.632		
	Together	60.687	98			
8. This system should be applied to students in other courses	Between the Groups	.170	2	.085	.104	.90
	Within the Group	79.989	98	.816		
	Together	80.158	100			
Total Average	Between the Groups	.203	2	.102	1.214	.30
	Within the Group	8.202	98	.084		
	Together	8.405	100			

*p≤0.05

From Table 5, the results of the comparison of satisfaction levels showed that the students studying in different fields or courses have different levels of satisfaction with the use of Moodle with statistically significant at p<0.05 level in the questionnaire for the items 'The students are able to learn ahead of time and review it at any time' and 'There are channels or options provided to search for more information'. A difference between groups is also indicated for the overall measure of satisfaction (p = 0.30). When all the different average satisfaction levels of using Moodle from all different data is brought together to do multiple comparisons by the Scheffe Method, the results are shown in Table 6 and Table 7.

Table 6 **Analysis of the Difference between the Average Points 'The students are able to learn ahead of time and review it at any time' classified by course**

Courses	Average	English	Business Administration	Nursing
English	2.937	-	062.-	*459.-
Business Administration	3.000	-	-	398.-
Nursing	3.398	-	-	-

*p≤0.05

From Table 6, the results of the analysis between the average level of technical satisfaction using Moodle on the questionnaire item 'The students are able to learn ahead of time and review it at any time' are that the students in the nursing field are different from the students in English department. The students in the field of nursing science have a higher level of satisfaction using Moodle, having access at any convenient time (3.40, moderate/high) than the students in the field of English (2.94, moderate). It might imply nursing students are more 'time-pressured'.

Table 7 **Analysis Results of the Difference between the Average Points on 'There are channels or options provided to search for more information' Classified by Course.**

Course	Average	English	Business Administration	Nursing
English	2.906	-	593.-	*617.0-
Business Administration	3.500	-	-	023.0-
Nursing	3.524	-	-	-

*p≤0.05

From Table 7, the results of the analysis of the double differences between the average levels of technical satisfaction using Moodle on the questionnaire item 'There are channels or options provided to search for more information' are that the students in the nursing department are different from students in the English department. The students in the field of nursing have a higher level of satisfaction with the use of Moodle with an average score of 3.52 (high) while the students in the English department scored on average only 2.91(moderate satisfaction)

DISCUSSION

The study on the effectiveness of teaching and learning through electronic media with Moodle for first year students of the Asia-Pacific International University found that most respondents were female, accounting for 82.5 %, aged from 20-25 years old that accounts for 63.9 %, and studying in the nursing department which represents 61.2 % of respondents by field of study in this sample.

This study on the satisfaction of teaching and learning through electronic media with Moodle as a whole indicates a moderate level of satisfaction (3.10) and has a level of technical satisfaction of using Moodle regarding item 7 'This system should be a good choice because the instructors can evaluate students who have problems in learning' at the highest reported satisfaction level with high (3.48) and the level of satisfaction with the questionnaire item 'The technique of using Moodle is not complicated' at the lowest level with 2.40 (low) indicating

that some students have difficulty in using the Moodle system. It appears most of the students found using Moodle beneficial as there are options or channels provided to evaluate students who have problems in learning and provide support, even though you night find use complex. This is consistent with the research done by Panida Nutawee (2017) who found that teachers were able to evaluate the learners: score thoroughly, quickly, accurately and clearly via the web. So evaluation via the web has become very popular. The web is an important channel that allows teachers to give feedback to individual students on time through a web board, e-mail, phone call, and via a chat room. The teacher can evaluate individual students interaction, and the result of evaluation can be tested later. This includes through examinations and assignments given to the students for an academic purpose. Kulaya Charoenmongkhongwilai (2017) found that the satisfaction of the students with the blended learning style using multimedia was very satisfying. This research corresponds with the research of Horvat, Dobrota, Krsmanovic and Cudanov (2015) whose study on the differences in the perceptions of learners about the features available and the quality of learning management through Moodle (LMS) found that students were satisfied with the quality of the Moodle Learning Management System (LMS). However, unlike the study currently being reported, the research of Hovat et al. (2015) found there were significant differences when the students were separated by age and different academic years. With the same level of perceived quality and dissatisfaction characteristics, interestingly the quality features were statistically significantly more important to female students.

The results of the comparison among the level of technical satisfaction using Moodle by gender and age of different students in this study found that there is no difference among their satisfaction level of using Moodle. Therefore, it is understood that all students can use Moodle and have their Internet connected at all different age levels to lessons the instructor has created in the e-learning environment via Moodle. This is consistent with the research of Kotzer, and Elran (2012) and Costa, Alvelos and Teixeira (2012). Their research into learning and teaching within the e-learning environment through the Moodle system, by using study skills and content in the fields of technology, mathematics and science, found that the environment of the digital technology era includes audio, animation, and games that connected with the Internet and promotes the opportunity for the students and teachers to learn through automated data usage tools. From this motivating environment, it continued to develop further into the teaching process (pedagogy) potentials and encouraged the teachers and the students to participate in the activities both within and out of the curriculum. Teachers are free to modify with additional content or use any existing tools as needed. Therefore, the teachers have an important part in

developing these tools to be more interesting in courses, improving the teaching and learning process for the learners to gain their knowledge, their ability to learn brilliantly, and provide the encouragement for them to do daily learning activities both inside and outside of the classroom.

The results of the comparison of satisfaction levels in this study showed that the students studying in some different fields or courses have statistically significantly different ($p<0.05$) levels of satisfaction with the use of Moodle in response to two questionnaire items: 'The students are able to learn ahead of time and review it at any time' and 'There are channels or options provided to search for more information'. The students in the nursing field are different from the students in the English department having a higher level of satisfaction for using Moodle (3.40, moderate to high) than the students in the field of English having 2.94 (moderate). This shows that the nursing students benefit more than the students from the English department regarding the questionnaire item 'The students are able to learn ahead of time and review it at any time' and this may well be because they are learning in a more time-pressured course structure which may require more hours of practical involvement in clinical practice. . As for the questionnaire item 'There are channels or options provided to search for more information', the students in the nursing department are similarly different from students in the English department. The students in the field of nursing have a higher level of satisfaction with the use of this provision of Moodle (mean score =3.52, high satisfaction) while the students in the English department scored on average only a mean of 2.91(moderate satisfaction). This indicates that the students in the field of nursing have a higher level of satisfaction with the use of Moodle, seeing more benefit and different channels or options in searching for additional information. This probably reflects the broader information sources required to support the concepts of healthy living and well-being. There are some questionnaire items that are in line with the research done by Arjsup, Khankham and Sittipoommongkol (2015) who confirmed that the method of teaching through electronic media is an option for students to review the lesson by themselves and that this is appreciated. Pacemska, Pacemska, and Zlatanovska (2012) indicated that the creation of the teaching and learning through the e-learning system resulted in the creation of a society with higher quality. By using technology, specifically Moodle, the teachers can improve the learning experiences of students, especially increasing both the willingness to learn and the motivation for using technology, which together   results in quality learning. The support from the university will encourage the teachers and the students to communicate online during the teaching with enhanced in-depth

knowledge for more successful learning, which is consistent with the research of Netwong (2013). The use of e-learning and the Moodle Learning Management System of Suan Dusit Rajabhat University for the development of digital citizenship and academic achievement of students in the field of information technology of the students from the Urban and Industrial Environment Program (Netwong), found that the digital citizenship and learning achievement of the sample group are positively related at a relatively high level and statistical significance level (r = 0.79).

This research shows that students who study different courses have a different degree of satisfaction with the effectiveness of blended learning through Moodle according to their individual abilities and needs. As a result of coming from different courses, there are also different basic skills in using technologies as well as the need to use and compare a different range of resources. However, interestingly blended teaching using electronic media through Moodle has the potential to improve the teaching and learning in different courses as the students have more immediate access to options or channels to search for more information and can also do their assignments whenever without interruption.

Recommendations

1. This research is a study of a specific group of students enrolled in the course GENL1101 Learning Resources and Skills at Asia-Pacific International University. The study results are limited. Therefore, it should in the future, be studied in a wider population by using students from other institutions.

2. This research is a course specific research focusing on teaching in the classroom that uses Moodle and multimedia only. The challenges of the institution in applying Moodle as a tool in teaching should be studied, and the development of teaching and learning communities should be made more open and inclusive. For example, the courses that are taught on Moodle should be opened to anyone who is interested.

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