The Development of Terminology Learning System for Thai Classical Dance through Learning Management System

Jansamorn Pholboon, Songkhla Rajabhat University, Thailand
Monton Pholboon, Prince of Songkla University, Thailand

Abstract

Effective use of a learning management system for self-paced learning can provide a valuable opportunity for students to make progress at a pace that is commensurate with their prior knowledge. To facilitate self-paced learning, this study aims to develop the terminology learning system for Thai classical dance through learning management system. Based on the Randomized Solomon four-group design, the study was implemented on a group of 100 students from Music and Performing Arts program, the faculty of Fine Arts, Songkhla Rajabhat University. The findings of the study revealed that the terminology learning system for Thai classical dance can be used to enhance the quality of teaching and learning. Acting as a powerful agent, it is most associated with 1) Electronic bulletin board ; 2) Test instruments including Pre-test and Post-test ; 3) Lessons comprising ; (1) a detailed analysis of posture for Thai classical dance ; (2) a set of illustrations of male and female gestures ; and (3) demonstration videos in the response of forward and backward replays linked on YouTube for interactive learning. Two experimental and two control groups were involved in this study. The findings revealed that after engaging with the learning system; the experimental groups showed higher achievement results when compared to the control ones. As for a study period, the experimental groups were able to complete their course within one week whereas the control ones needed two consecutive months to complete the course. Moreover, according to the achievement scores, the experimental groups showed higher statistical results than the control ones in all aspects. With regard to satisfaction with learning and practice system for Thai classical dance, the findings indicated all at the highest levels.

Keywords: Learning Management System, Terminology Learning System, self-paced learning, Thai classical dance

Introduction

Thai Classical dance dates back more than 500 hundred years when the area of present-day Thailand, Cambodia and Laos was ruled by various kingdoms. One of the most notable was the Kingdom of Siam. With little tradition of spoken theatre, dance was the main dramatic art form (Sukawanich, 1982). In view of teaching Thai classical dance in practice, teachers generally use the method of lecture and demonstration. In other words, the teacher leads while the students follow.

The teaching and learning is considered successful from generation to generation due to their memory, imitation and practice. Traditionally, the teachers of Thai classical dance have to pay attention and observe their teachers from the old generation and teach their students accordingly. The more they can observe and memorize, the more they can improve their students in terms of Thai classical dancing postures efficiently. This kind of traditional teaching method is perceived as the limitation especially when the teachers miss to observe and pay attention to those; it may eventually disappear or be less memorized from generation to generation. Moreover, regarding the students, they certainly have different learning styles. While some students just understand the first step of classical dance, the others may almost finish all the tasks. In addition, students might prefer to review and practice a number of times to improve the performance at their own pace.

Therefore, in this study, there is a shift from using the traditional methods to a more modernized system, known learning management system; in this regard called the terminology learning system for Thai Classical Dance. To enhance the quality of learning system, it will be accompanied with the improvement of the traditional form of teaching and learning, rendering it into a more modernized process including modern teachers, high-motivated students, modern university, and advanced educational technology (Aljraiwi, 2017). It is worth mentioning that the past decade has seen enormous development in the use of learning management systems (LMS) in higher education institutions, with support provided to teachers and students during the implementation periods (Dahlstrom, Brooks, & Bichsel, 2014). This, accordingly, provides the potential for rich learning environments both on campus and on those studying at home. Indeed, a learning management system, or LMS is typically used in schools for online and blended courses, and when used properly, it can be a valuable tool that increases the effectiveness of learning while reducing costs and time spent on teaching and learning (Weaver, Spratt, & Nair, 2008).

Thus, the main aim of using the terminology learning system is to provide a valuable opportunity for self-paced learning. Moreover, the students are able to make progress at a pace that is commensurate with their prior knowledge. With self-paced learning, the students will definitely use it to meet their needs and different learning styles.

Objectives of the study

1. To develop the terminology learning system for Thai classical dance through learning management system.
2. To determine the potential of using the terminology learning system for Thai classical dance.

Methodology

1. Research Design

In this study, the researchers adopted the true-experimental design and the Randomized Solomon four-group design as well as using classroom web applications on teaching and learning to enhance students' academic performance.

2. Sampling Method

Based on the true-experimental design and the Randomized Solomon four-group design, the study was implemented on 100 students from Music and Performing Arts program, the faculty of Fine Arts, Songkhla Rajabhat University.

The Solomon four-group design is purposively a standard pretest and posttest two-group design and the post-test only control design. The various combinations of tested and untested groups with treatment and control groups can be used to ensure that confounding variables and unnecessary factors have not influenced the results. Using the purposive sampling method, a sample of 100 students was selected as shown in Table 1.

Table 1

the Randomized Solomon four-group design

Group	Pre-test	Intervention	Post-test	Number of students
(R) E_1	O_1	X	O_2	25
(R) C_1	O_1	-	O_2	25
(R) E_2	-	X	O_2	25
(R) C_2	-	-	O_2	25

Where: R = Random sampling
E = Experimental group
C = Control group
O1 = Pre-test
O2 = Post-test
X = Intervention using terminology learning system for Thai classical
dance through learning management system

Table 1 illustrates the features of each of the four groups in the Solomon four-group design. The basic components of a true experiment include a pretest, posttest, control group, and experimental group. By having one set of experimental and control groups that complete the pretest (Group 1 and Group 2) and another set that does not complete the pretest (Group 3 and Group 4), true experimental designs require random assignment.

In the Solomon four-group design, two groups are treated as pretest, experimental group intervention, and posttest. The other two groups do not receive the pretest, although one obtains the intervention. In other words, control groups do not receive an intervention, and experimental groups receive an intervention.

The four groups have four different learning and practices as follows:

1. Group E1: pre-test, intervention, post-test
2. Group C1: pre-test, no intervention, post-test
3. Group E2: no pre-test, intervention, post-test
4. Group C2: no pre-test, no intervention, post-test

3. Research Instruments

Acting as a powerful agent, it is most associated with:

3.1   A learning management system designed for the terminology learning system for Thai classical dance
   a) Lessons comprising
      i) A detailed analysis of posture for Thai classical dance
      ii) A set of illustrations of male and female gestures
      iii) A set of demonstration videos in the response of forward and backward replays linked on YouTube for interactive learning
3.2   Test instrument including
   a) Pre-test and Post-test: 100 students in Music and Performing Arts program, the faculty of Fine Arts, Songkhla Rajabhat University
3.3   Assessments for a learning and practicing system of Thai classical dance
   a) Quality Assessment: 3 experts in curriculum, teaching, and assessment
   b) Satisfaction Assessment: 35 teachers and 35 students in Music and Performing Arts program, the faculty of Fine Arts, Songkhla Rajabhat University

Regarding the test instrument, to establish the content validity of the test instrument (Pre-test and Post-test), the Content Validity Index (CVI) was used based on the ratings from three experts. With reference to Polit and Beck (2006), CVI is regarded as the index of interrater agreement that expresses the proportion of agreement concerning the item relevancy. Lynn (1986) also stated that CVI is a commonly used approach to content validity to facilitate the rejection or retention of items.

This instrument was validated by the experts comprising three lecturers in the field of Thai classical dance teaching from Thailand to ensure that it was relevant in measuring the students 'performance. The experts were required to rate the relevancy of the items with the validation form with 4-point scale (1=not relevant; 2=somewhat relevant; 3=quite relevant; 4=highly relevant). Some items have been amended based on the recommendations by the experts. On the basis of the feedback received from the experts, the instrument has been revised, and items have been finalized, accordingly.

As shown in Table 2 below, S-CVI for the test instrument relevancy is 0.97 based on the rating of the three experts. The rating of 0.97 is satisfactory based on the S-CVI guideline in item acceptability suggested by Davis (1992). It means that the test instrument was relevant in measuring the students' performance.

Table 2
S-CVI of the Test Instrument

Test Instrument	S-CVI	Mean Expert Proportion
Rating	0.97	0.97

Note: S-CVI, content validity index for the scale.
* Waltz et al. (2005), p. 155.

Data Collection Procedure

1. Survey Set-up

The set-up stage is a very important part intended to assist the researchers in identifying the key factors in planning the research project by document analysis and information to determine the direction of the study.

2. Data gathering instruments

It is divided into two main parts, namely the test instrument and the questionnaire. It aims to gather the information related to dance information, students' performance and satisfaction from the stakeholders after using the terminology learning system for Thai classical dance through web application.

3. Determining the potential use of the terminology learning system for Thai classical dance through learning management system

The processes are as the following:

  3.1 Main system and database system design
  3.2 Content Validity
        The assessments were sent to three experts in the field of curriculum, Thai classical dance teaching, and assessment with a request for feedback on the relevance of each item (impact assessment). The experts were also asked to evaluate whether the items covered the important aspects or whether certain components were missing. They could also add comments on any item.
  3.3 Trial the system in order to acquire an effective set of activities and performance   as well as some improvements
  3.4 Making some amendments based on the results from the trial.
  3.5 Administering the assessment to 100 students in Music and Performing Arts program, the faculty of Fine Arts, Songkhla Rajabhat University
        The details are as follows.
        a) The Student Login. It requires the registration to confirm identity at http://ppsthaidance.skru.ac.th/. Once, they register, they can easily login to learn and practice the lessons at their convenience. When entering the homepage, the students must enter their username and password by clicking the login button. The username and password is previously provided by the teacher.
        b) After login process, the subject will appear as My Courses and Dance Courses, respectively.

c) When entering a course, the main details of the learning system are shown as follows: 1) Bulletin; 2) Quiz; and 3) Lessons

d) News section. This part is important when the teacher would like to inform the students or post news and information related to the course.

e) The tests in the learning system: pre-test and post-test

   Pre-test and Post-test are similar to checklists in that they can measure student needs before a lesson and tutorial and then evaluate how well the lesson and tutorial met those needs.

f) Content

   The students can choose the topic that they want to study by clicking on the desired topic. As for the content, it is divided into 3 topics, which are 1) head and shoulders 2) arms and hands, 3) feet and legs. Each section consists of a description with illustrations and demonstration video.

3.6 Data analysis and interpretation by means of descriptive statistics

Research Findings

The findings of the study revealed that, to develop the terminology learning system for Thai classical dance through a learning management system can be used to enhance the quality of teaching and learning. The findings are presented as follows.

Table 3
Students' Achievement among Four Groups

Group	Percentage	Mean	SD	Study period	Study time	Place
Experimental group 1	97.87	29.36	2.94	1 week	Not controllable	Not controllable
Experimental group 2	99.00	29.72	3.29	1 week	Not controllable	Not controllable
Control group 1	88.67	26.60	2.47	2 months	In class	In class
Control group 2	88.80	26.64	2.75	2 months	In class	In class

As shown in Table 3, it revealed that after the study process using the terminology learning system for Thai classical dance, the mean scores obtained from the two experimental groups are somewhat similar at 29.36 and 29.72, respectively. In addition, interestingly, the two control groups shows the same results as their mean scores are similar at 26.60 and 26.64 respectively. However, when compared across the groups, the experimental with the control groups, the results yielded differently. Both experimental groups show considerably higher mean scores when compared to the control ones (29.36, 29.72, 26.60 and 26.64, respectively). Regarding the study time and place, the experimental groups are not controllable, whereas the control group are controlled to be in class only. Lastly, as for a study period, the first experimental group could complete their course within one week while the control one need two consecutive months after completing the course.

Table 4

Students' Achievement regarding Categories of Classical Dance

Classical dance performance	Assessment	E1			C1			E2			C2		
		Mean	S.D.	%	Mean	S.D.	%	Mean	S.D.	%	Mean	S.D.	%
head and shoulders	Pre-test	3.16	1.57	39.50	3.08	1.15	38.50	-	-	-	-	-	-
	Post-test	5.76	1.42	72	4.32	0.90	54	6.12	0.92	76.50	5.56	1.44	69.50
Arms and hands	Pre-test	4.60	2.65	46	4.44	1.50	44.40	-	-	-	-	-	-
	Post-test	7.44	1.44	74.40	7.36	1.52	73.60	7.96	1.99	79.60	7.08	1.91	70.80
feet and legs	Pre-test	4.40	1.96	44	4.08	1.87	40.80	-	-	-	-	-	-
	Post-test	9.24	1.36	92.40	8.04	1.57	80.40	8.72	1.31	87.20	7.16	1.54	71.60
Total	Pre-test	18.16	5.20	51.89	17.26	3.21	48.57	-	-	-	-	-	-
	Post-test	29.36	2.94	83.89	26.60	2.47	76.0	29.72	3.29	84.91	26.64	2.75	76.10

As shown in Table 4 above, when compared across the categories of classical dance: head and shoulders, arms and legs as well as feet and legs, respectively, the findings revealed that that both experimental groups had higher academic achievement than the control groups. It is worth to mention that the first experimental group (E1), after receiving intervention, showed higher students' average mean scores of post-test than pre-test in all categories ; for example, head and shoulders (M= 5.76, SD = 1.42 ; M= 3.76, SD = 1.57). Similarly, arms and hands, E1 showed higher students' average mean scores of post-test than pre-test (M= 7.44, SD = 1.44 ; M= 4.60, SD = 2.65).

Remarkably, when compared the first experimental group (E1) with the first control group (C1), the results from post-test revealed that E1 had higher average mean scores (M= 5.76, SD = 1.42 ; M= 4.32, SD = 0.90) meaning that after receiving intervention, the students were able to achieve higher scores from post-test as compared to no intervention support during their study period. Above all, the results showed both experimental groups had higher average mean scores r than both control groups in all categories.

In addition, the researcher determined the satisfaction of the learning management system by administering the questionnaire to 35 teachers and 35 students. The results are presented in Table 5 below.

Table 5
Satisfaction of the Terminology Learning System for Thai Classical Dance

Content	Mean	SD	Satisfaction level
1. Content			
1.1 The content is suitable for the students.	4.82	0.39	Most
1.2 The content is easy to understand.	4.71	0.46	Most
1.3 The language used is correct, concise and clear.	4.75	0.47	Most
1.4 The sequence is clear.	4.62	0.54	Most
1.5 The content helps understand more about dance practices.	4.75	0.43	Most
1.6 The content is valuable as a medium of teaching and learning.	4.71	0.16	Most
Total	**4.73**	**0.21**	**Most**
2. Design and implementation			
2.1 The video is clear and attractive.	4.67	0.53	Most
2.2 The sound is clear.	4.63	0.59	Most
2.3 Time in each dance position is appropriate.	4.60	0.55	Most
2.4 The overall screen design looks comfortable and eye-catching.	4.68	0.55	Most
2.5 The title of each song is attractive and easy to understand.	4.68	0.55	Most
2.6 The font size and image formats are clear and easily readable.	4.68	0.50	Most
2.7 The system works continuously without interruption	4.68	0.50	Most
2.8 The system is user-friendly.	4.71	0.43	Most
Total	**4.67**	**0.05**	**Most**
3. Advantages			
3.1 It is effective in teaching and learning Thai classical dance.	4.81	0.43	Most
3.2 It is regarded as a useful teaching tool.	4.75	0.52	Most
3.3 It is beneficial for self-paced learning.	4.77	0.46	Most
Total	**4.72**	**0.06**	**Most**

As shown in Table 5, in terms of the content of the system for Thai classical dance, the results revealed that the overall results are at the highest level of satisfaction in all aspects with an average mean score of 4.73 and a standard deviation of 0.21 (M= 4.73, SD = 0.21).

Likewise, as for the design and implementation, it was found that the overall results were also at the highest level of satisfaction with an average mean score of 4.67 and a standard deviation of 0.05 (M= 4.67, SD = 0.05).

Finally, regarding the advantages, the overall results were at the highest level of satisfaction in all aspect with an average score of 4.72 and a standard deviation of 0.06 (M= 4.72, SD = 0.06).

Discussion and Conclusion

This study aimed at using the terminology learning system for Thai classical dance through learning management system to help enhance the quality of learning and practice. The proposed learning system offered tools to facilitate the student's learning at their own pace. Two experimental and two control groups were involved in this study. The findings revealed that after employing the learning system, the experimental groups showed higher achievement results than the control groups in all aspects. Likewise, according to the achievement scores, the experimental groups showed higher statistical results than the control ones in all areas.

Furthermore, as for a study period, the experimental groups completed their course within one week while the control ones needed two consecutive months to complete the course. With regard to satisfaction with learning and practice system for Thai classical dance, the findings indicated all at the highest levels. The research findings correspond to several studies such as a study by Ali et al. (2013) that teachers can use the terminology learning system to enhance the students' performance. Hence, it can be concluded that the system is considered effective and beneficial for teaching and learning Thai classical dance.

References

Aljraiwi, S. S. (2017). The Effect of Classroom Web Applications on Teaching, Learning and Academic Performance among College of Education Female Students. Journal of Education and Learning, 6(2), 132-145.

Alghareeb, Z. (2009). Electronic courses: Design, production, publishing, application and evaluation. Cairo: AlmElkotob.

Ali, S., Haider, Z., Munir, F., Khan, H., & Ahmed, A. (2013). Factors contributing to the students' academic performance: A case study of Islamia University Sub-Campus. American journal of educational research, 1(8), 283-289.

Babbie, E. (2010). *The practice of social research (12th ed.).* Belmont, CA: Wadsworth.

Bennett, S., Bishop, A., Dalgarno, B., Waycott, J., & Kennedy, G. (2012). Implementing Web 2.0 technologies in higher education: A collective case study. Computers & Education, 59(2), 524-534.

Campbell, D., & Stanley, J. (1963). *Experimental and quasi-experimental designs for research*. Chicago, IL: Rand McNally.

Crook, C., & Harrison, C. (2008). Web 2.0 technologies for learning at key stages 3 and 4: Summary report. Retrieved from http://dera.ioe.ac.uk/1480/1/becta_2008_web2_summary.pdf

Davis, L. L. (1992). Instrument review: Getting the most from a panel of experts. *Applied Nursing Research, 5*(4), 194-197.

Eden Dahlstrom, D. Christopher Brooks, and Jacqueline Bichsel. The Current Ecosystem of Learning Management Systems in Higher Education: Student, Faculty, and IT Perspectives. *Research report*. Louisville, CO: ECAR, September 2014. Available from http://www.educause.edu/ecar.

Jou, M., & Shiau, J. K. (2012). The development of a web-based self-reflective learning system for technological education. The Turkish Online Journal of Educational Technology, 11(1), 165-171.

Lynn, M. (1986), Determination and quantification of content validity. *Nursing Research, 35(*6), 382-385.

Polit, D. F., & Beck, C. T. (2006). The content validity index: are you sure you know what's being reported? Critique and recommendations. *Research in nursing & health*, *29*(5), 489-497.

Salkind, N. J. (2010). Encyclopedia of research design. London: Sage Publications.

Sukawanich, C. (1982). Talk to Thai Traditional Dance Teacher. Interview from cassette on 10/10/1982 at Musical Art Center, Bangkok Bank.

Weaver, D., Spratt, C., & Nair, C. S. (2008). Academic and student use of a learning management system: Implications for quality. *Australasian journal of educational technology*, *24*(1), 30-41.