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A Web-based Learning System for Myanmar Culture and Language Learning of Undergraduate Students in Thailand

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Abstract: An efficient online learning system leads any education to increase overall performance and accomplish a specific course. Traditional learning of Myanmar language and culture makes infringingly the decrease of motivation in students and paperwork of the course. Therefore, the students need the system that can help them to review the content effectively in order to motivate them in the study and a system that provides better management of learning materials, exercises, and activities, including a more comfortable tool for lecturer and students, and provide online learning activities based on student's performance, promote understanding of Myanmar Culture Learning (MCL). In this study, an online web-based learning and exercising system has been developed by adopting the context of the course on Myanmar Culture and Language. The developed system embedded adaptive structured questions, assessment, and learning profiles that can help students to understand the content outside the classroom better. The system has been tested for system performance before use. To find the effectiveness of this system, the data analysis has been conducted. The results show that the students who were learning and practicing this system have a higher understanding of the content and better achievement in the exam. The findings of this study shed light on the significance of promoting the learning motivation of MCL and learning paths for each student.

Keywords: Technology-enhanced language learning, Myanmar culture, Myanmar language, learning information system, online learning

1. Introduction

Studying Burmese Language and Culture extends the power to unite people, which further triggers a sense of belonging to one community. People are well-connected if they can engage with the locals and their culture. In doing so, understanding Myanmar culture and language could help people adapt to a new environment, new culture, new policy and therefore, connecting people through language and culture will be necessary. By learning other regional cultures, it helps break down barriers and overcome stereotypes, and it creates an environment for understanding and perspective building. Despite, Myanmar is in the mean of developing the democratic country in ASEAN, which mean the country itself open much liberty to the world in other to welcome a lot of foreigner business companies, agencies, travelers, etc. Moreover, Myanmar has become a heart of attention paid between academics and observers alike among ASEAN members. According to Asian Socio-Culture and Community (ASCC), Blueprint ASEAN members must exchange of cultural performers and scholars among the Member States through the education system to provide further access and understanding of the different cultures of ASEAN Member States. It is a crucial thing to start to promote the learning of Myanmar culture learning in the country.

The current process of learning Myanmar language and culture for learners is based on the textbook, which is published by Myanmar cultural Organization. On the Other hand, the process of Myanmar culture learning for an international standard is weak in kind of technology uses in the

meanwhile of IoT (Internet of Things). On the contrary, there are also online learning for Myanmar language; all the lessons contain audio and are all offered for free and also can learn the alphabet together. Despite, Myanmar Culture and history can be studied through social media platforms. It still lessons in providing the digital learning system for the cultural part. However, it should be created some system with high quality for Myanmar culture learning to enhance the diversities of Myanmar itself and to promote the beauty of the country.

Recently, most classrooms need a system to promote the learning process. The accurate student's knowledge feedback is essential for maintaining the students and lecturer discipline. Traditionally, the classroom is manually used by the paper-based testing system to know the understanding of students. Despite, the existing cultural learning system tends to target on a content-based blog instead of providing a learning process such as exercising, test, and learning of the system.

From the existing problem with CMS and LMS, the system has only content and exercise for the student. This cause does nothing to bring the student to understand clearly or understand just only a few percent. Some student does the exercise for a pass, not genuinely learning. Cause of this motivate to develop the new system, PMLS system develops for control and coordinates for cover all of the problems. The system will progress of student's performance. The highlight is system planning and feedback for the student. PMLS is a system with learning systematic that starting with the learning material, exercise, quiz, including evaluation and summary for the student. Step of PMLS is learning from content and do exercise which their score must meet the criteria to be able to learn the next chapter. Lastly, the student must do the quiz, and they will know their performance for considering and analysis themselves. PMLS define that student does exercise until reaching the criteria. The system will analyze and feedback for students which point that they misunderstand, the system will show the suggestion which should be improved. From this point, PMLS system will bring the student to learning by understanding and can suitably develop themselves.

To address the above-mentioned issue, our group developed the online learning system for Burmese culture learning that provides better management of learning materials, exercises, and activities, including a more comfortable tool for lecturer and students, and provide learning activities based on student's performance., promote understanding of MCL (Myanmar Culture Learning). In fact, promote the learning motivation of MCL on the proposed system. Therefore, an online web-based Myanmar learning system (MLS) is a little more advanced than other regular cultural and language learning systems by giving learner feedback on their knowledge while working on quiz and exercise in the system, locked chapter and graphical feedback on different topics to motivate students. However, the system is focused on only one course in university; it still needs to add a more flexible learning process.

2. Related Study

2.1 Web-based Learning Environment

Web-based learning administration is proposed to improve the student's learning effectiveness. In this framework, the four most critical qualities are semantically itemized to portray each learning article and learner. At a similar time, students can adjust their very own learning substance amid the learning procedure. Exploratory outcomes demonstrate that the proposed framework can improve student learning proficiency and viability.

It focuses on lecturer need to build up an instructive situation that will offer to the distinctive learning styles of the student. It is likewise indispensable that understudies have a comprehension of their learning styles to improve the speed and nature of their learning. It likewise shows the significance of individual contrasts a factor in plan the educating furthermore, learning process, particularly in online guidance.

In a mixed learning condition that uses innovation, understudies are not bound by their homeroom dividers as far as access to data, information, and specialists. A carefully rich learning condition gives students the specific circumstance and significance for discovering that they need. Learning programs that offer a remunerating gaming condition that more youthful and more seasoned

student plays with without anyone else time is a suitable method to connect with students by making their learning work feel like play.

2.2 TELL and Myanmar Culture/Language Study

Technology-enhanced Language Learning (TELL) uses computer technology, including hardware, software, and the internet to enhance the teaching and learning of languages by using a hand-held electronic dictionary to look up a word in class Chatting with a friend on Instant Messenger using a little English Reading news website Participating in an online discussion board. This helps students develop vocabulary, comprehension, spelling and even pronunciation for software that includes voice. TELL improves motivation and develops better attitudes in students towards learning. The research indicates that students' attitudes and motivation tend to be better if they have control over their learning and that some students do learn more if given the opportunity to control the amount and sequence of their work." (Bush and Terry 1997).

There are also studies focusing on the positive influence of technologies on students' attitudes to language learning, including increasing students' interest motivation, confidence, and self-efficacy in the engagement of learning (Chen, 2007). Tamim, Bernard, Borokhovski, Abrami, and Schmid (2011) pointed out that the experimental studies here mostly focused on comparing technology with "no technology". Given there are various technological systems like virtual learning environments, conversational agents, mobile applications, etc., it can be said that there is a lack of specific research studies on technology-enhanced language learning. In this study, we have reviewed some of the theories and research related to technology-enhanced language learning, and the study is an attempt to point out some of the issues that seem to be absent in related literature. Researchers are suggested to take new alternatives regarding the use of brand-new technologies and conduct experimental studies in order not to lose actuality.

3. A Development of Web-based Learning System for Myanmar Culture and Language

3.1 Contextual Analysis

Analysis of the target audience is another crucial step. The learner's key characteristics will influence the design and delivery of e-learning (e.g., their previous knowledge and skills, learning context, and technology access background). Task analysis identifies the job tasks to be learned or improved by learners and the knowledge and skills to be developed or strengthened.

As mentioned in the previous learning style of Myanmar culture course, lecturers have not used any software to manage the learning process. The course materials, lesson exercises, score marks, and other class activities have been conveyed in the classroom, relying on paper-based and off-line learning style. Lacking online learning, teachers cannot handle many paper works, gather student assignments, take the examination, manage student score, and communicate outside the classroom. Meanwhile, the current traditional learning does not provide flexibility and convenience to the students who cannot attend the class on the schedule. Moreover, they also are unable to communicate with the lecturer and classmate out of the classroom effectively. We have obtained the teacher and student requirements for online learning as follows.

1) Functional requirement: The online learning system should enable teachers to create content and assessments, monitor the progress of their students, record student profiles, and manage to grade with standard scores. Students can learn and self-practice at any free time, do assessments, and view their scores. For more student motivation and personalization, we suggest that the system should provide flexible questions and different topic feedbacks for the individual student. Points or student test scores also arrange the topic organization.

2) Non-functional requirement: The qualification aspects of the system should be concerned. Therefore, several non-functional requirements are consisting of availability, security, authentication, learnability, and usability. The proposed system is internet based, and it is available anywhere and anytime not only on campus but outside of the campus. The database of the e-learning must be confidential and private. The system must authorize only valid users to access the e-learning system.

E-learning system should focus on learners, not just the contents. The interface of the proposed e-learning should be user-friendly and support personalization based on learner's preferences.

The functionalities of our web-based application are defined as follows. There are five primary features to be used in student account consisting of login authentication and date--stamped, learning process in suggested chapter, exercises for practice which can be locked for next chapter access if the learner cannot pass the current chapter, taking quiz, keeping and viewing score as historical log score (i.e., pass, fail, or pending). In the part of lecturer, there are five primary functions including login authentication, course management for posting lesson materials and resources, student assessment of each chapter.

3.2 Design

Our system structure is mainly designed into two modules. Firstly, Learning Activities module contains a database of all lesson materials and all learning functions. Secondly, the Adaptive Learning Unit performs the learning analysis, which allows some specific lessons and evaluates a student for "pass" or "fail." It provides a further suggestion of learning resources suitable for a student who fails in a particular lesson. The learner is required to pass the lesson test before moving to the next lesson. This part will be described in Section 3.2.1.

3.2.1 System Design

To produce the e-learning which can be dynamically adapted based on the learner' s preference, we introduce the personalization process and algorithm as described below. The online web-based learning experiences building process consists of 2 main parts:

1) E-learning topology model

The educational domain is modeled using ontologies which is similar to Topic Map [1]. Therefore, our e-learning ontology is represented by a graph showing the relationship among relevant topics. Figure 3 shows the proposed modeling of our e-learning course. The basic relations of the model are HasPart (HP) being a part of relation and IsRequiredBy(IRB) being an order relation. Suppose that C represents domain of learning of the Myanmar Culture and Language. To complete this subject, learner needs to learn chapters C1,C2,C3 and so on. The relations HP(C,C1), HP(C,C2), HP(C,C3) represent the specific order to learn in the course. In the meantime, IRB(C1,C2), IRB(C2,C3) and IRB(C3,C4) state that student needs to learn and achieve passing score of C1 before learning C2, as same as learning C2 before C3, and C3 before C4 respectively.

In our ontology design, the learning objects (LOs) are learning content design, development and reuse. They are provided as a material for a single lesson or topic. Example of learning objects consists of simulations, interactive learning content, exercises, assessment, associated media element and so forth. In the diagram, there are the connection namely, HasResource(HR) between the lesson and a LO. The relation HR(Cx, LOy) represents the learning object LOy packaged in lesson Cx. Some LOs can be used in multiple lessons i.e. LO1 is shared among Lessons C1 and C2.

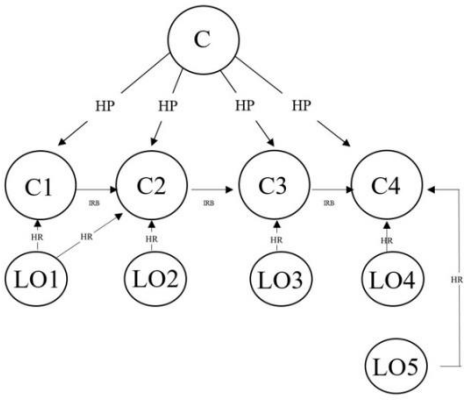

Figure 2. E-learning topology model of the MLS.

2) Learner model

The learner model mainly describes each learner characteristic by representing Subject State and a set of Learning Preferences. The subject state is defined based on the list of lessons in the e-learning topology. Each of them shows the grade range from 0 to 10, where 0 represents learner is totally failed, whereas 1 represents the learner can complete the lesson. A lesson learn can be considered as "pass" when the grade is greater than some fixed value. The learning preferences define the properties of the learning object or learning resource which is suitable for the learner's characteristics in particular. The properties are composed of Lesson required, Learning Resource Type, Level of Difficulty, Language and Learning Time.

To implement these 2 models above, we use Learning Path Algorithm (LP) to generate the right ordered list of Learning Object that the learner needs to acquire sufficient knowledge for each lesson and finally achieve the whole course objectives. The algorithm is described by simple example of a student to present the complete process as follows.

Step 1. The Learning Path is generated as fit to this student
LP ={C2,C3,C4}

Since C1 has already learned and passed, it has been removed from the path.

Step 2. The Subject State and Learner's Preference State of this student is presented as
Subject State: C1(8), C2(3)
Learning Preference State:
Lesson required -> C2
Learning Resource Type-> Multimedia content
Level of Difficulty -> Medium
Learning Time -> 30 minutes
Language -> ENG

Step 3. Learning object is selected based on the metadata to satisfy the student's learning preferences.

LO1 (Explain(C1,C2), Multimedia, Easy, 1 Hr, ENG)
LO2 (Explain (C2), Multimedia, Medium, 30 M, ENG)
LO3 (Explain (C3), Multimedia, Medium, 45 M, ENG)
LO4 (Explain (C4), Multimedia, Hard, 1 Hr. ENG)
LO5 (Explain (C4), Multimedia, Hard, 1.30 Hrs ENG

In the example, this student is suggested to learn with the set of {LO1, LO2} prior to the next lesson C3.

3.2.2 Content Design

In our web-based e-learning, the course content has been broken down into screens, modules, situations, visual and instructional elements. The content consists of a learning document, presentation, and multimedia, which respond interactively to the target learner. The Myanmar Culture course e-learning consists of 4 main chapters. Chapter 1 introduces politics, economics, and history of Myanmar, Chapter 2 presents people, weather and places of Myanmar, Chapter 3 presents Myanmar traditions, customs, religions, and festival, and Chapter 4 describes the entertainment show and art in Myanmar. Figure 3 shows the content structure of the proposed e-learning.

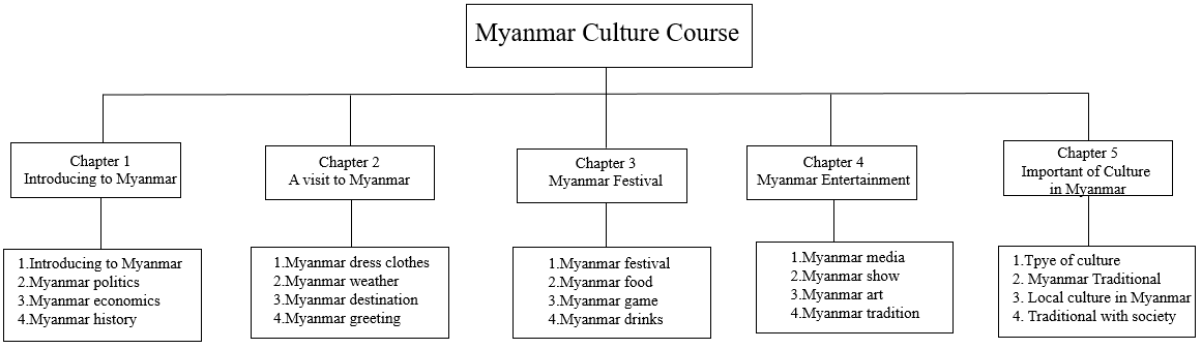

Figure 3. Myanmar culture course content structure.

3.3 Development

This stage is the third step, as shown in the ADDIE model. In this stage, the configuration archives from the second stage are utilized to implement the structure and produce creating of the framework which incorporates framework building, conveying, introducing, arranging, testing, and discovering blunders. The program was written in JavaScript programming language because there is a suitable cost server deal in Thailand as the client's craving, and there is open source accessibility. In building up, the venture system is in Model-View-Control (MVC) engineering because of its convenience of advancement and support. Moreover, the firebase as the database the board programming.

There are two types of assessments used in the MLS system Formative assessment for improving teaching and learning, and Summative assessment intend to capture what a student has learned, or the quality of the learning, and judge performance against some standards. Additionally, two types of activities take place during the assessment, which is taking exercise and taking the quiz to collect the assessment score for each student are presented in Figure 4. The resources of the content referenced on Myanmar Culture and learning Book. We used PDF as a lesson material to enhance the standard of concrete by adding a figure to explain the text and input exciting topics for students to motivate their study.

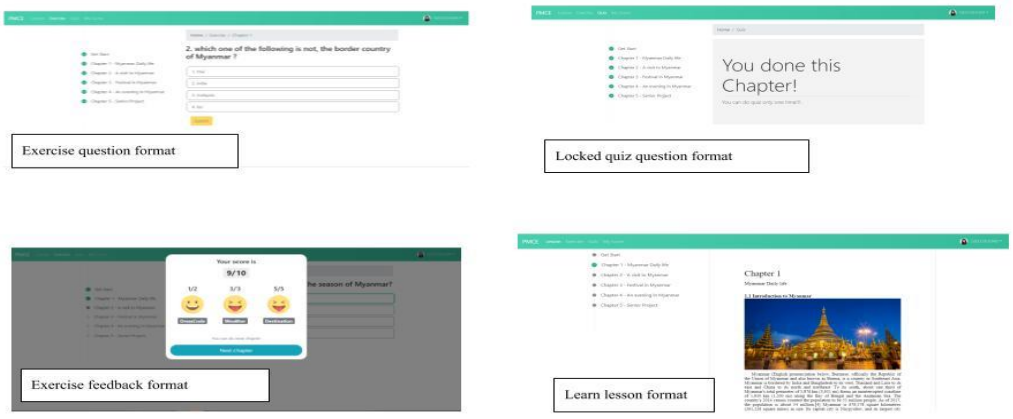

Figure 4. Content for each screen module.

4. Experimental Study

4.1 Experimental Design

In comparison to the traditional method, an experiment was conducted to evaluate the effectiveness of the online learning system. In this study, since the participants were not randomly assigned, a

quasi-experimental research design was used. The experiment was conducted with ten students with a simple drawing of the class's representatives from the Myanmar Culture course at Mae Fah Luang University in Thailand. The aims of the study were:

1. Examine students' related knowledge of online learning Myanmar Culture class.
2. Determine students' usefulness on online learning at the undergraduate level in Mae Fah Luang University.
3. Determine students; detailed feedback after using the system of MLS.

4.2 Participants

The selected representative came from a different educational background and different culture since three students from Thailand, four students from China, and three students from Myanmar. These students also from the different major of studies field. Therefore, it can be determined with confidence that this effect on the dependent variable is directly due to the independent variable manipulation. For these reasons, the best type of research design is often considered to be specific experimental designs. Their computer experiences, consisting of apparent self-use, gratification, and efficiency, and the application of online learning, play a dominant role.

4.3 Instrumentation

The research tools used in the experiment consisted of pretest, posttest, and satisfaction questionnaire. The pretest and the posttest were designed by Myanmar Culture class teacher who has at least five years of teaching experience. Each chapter test contained ten multiple-choice-question items, with one score per item. The pretest was done why taking the manual based test, and the posttest was done by using a systematic test. The questionnaire was intended to investigate students' attitudes toward the system, consisting of 8 items of 5-point Likert scale (3 items each for visual systematic learning, enjoyment, and motivation), ranging from "1" for lowest satisfaction to "5" for highest satisfaction. In collecting this data, we ran a simple activity to ask students to rate each question by answering on the paper; we also asked them and facilitators to provide feedback for the application.

5. Results

5.1 Learning Achievement

To break down Myanmar Culture learning improvement, enlightening measurements, and t-test was utilized. As appeared in Table 1, the outcomes demonstrate that the understudies have higher posttest scores than the pretest score. it was found that the exam scores of students before using MLS (Mean = 5.9, SD = 1.45) were significantly lower than those scores after using MLS (Mean = 9.2, SD = 0.78). To see the contrast between the two scores, a combined example of t-test was led, and the outcome demonstrates that the pretest and posttest scores are fundamentally extraordinary. It infers that the created, versatile diversion system can enable understudies to adapt progressively.

Table 1

Student's Pretest and Post Test Score

Test	*N*	*M*	*SD*	*t*	*p*
Pretest Score	10	5.9	1.45	6.32	0.00*
Post-test Score	10	9.2	0.78		

* $p < 0.05$

5.2 Satisfactions towards MLS

In-depth and thorough literature study indicated a significant and positive association between students ' interest in online learning, computer usability, and ease of use. The research shows that students widely accepted e-learning because the internet network makes it easy for them to search, gain, and work independently on learning materials and resources in a short period. The finding on a quantitative study, using a structured questionnaire at the Mae Fah Luang University, School of Management, to explore attitudes towards web-based distance learning and to identify positive attitudes towards online learning due to feasibility and new ways of learning.

Table 2

Student's Satisfaction towards the Developed E-Learning System

Dimension	Satisfaction	Mean	SD	Remark
Systematic Learning	The system help improves student assessment score	4.10	1.66	High Satisfaction
	The system helps related lesson learn from the classroom	4.30	0.94	High Satisfaction
	Learning lesson in a systematic way make improve knowledge about the content	4.00	1.05	High Satisfaction
Enjoyment	I enjoy doing assessment through MLS system	4.80	0.63	High Satisfaction
	It's fun to recall your lesson learned while doing quiz	4.20	1.03	High Satisfaction
	I am excited to continue doing exercise after finish one chapter	4.70	1.63	High Satisfaction
Motivation & Challenge	I feel challenged to continue taking exercise until it finished	4.30	0.94	High Satisfaction
	The feedback of the system motivates me to study more?	4.20	0.91	High Satisfaction

6. Conclusion

The development of this system aims to improve the learning of Myanmar Culture Course in Mae Fah Luang University in Thailand. Our group had learned that the development of the E-learning system depends highly on the practical learning objective of its students. This study developed the system to be very helpful in the assessment management of lecturer and students to be able to improve the learning of the class and promote understanding of the lesson. Also, this system provides better management of learning materials, exercises, quiz including a more comfortable tool for lecturer and students, and provide learning activities based on student's performance. Promote understanding of MCL (Myanmar Culture Learning). The system will help them to review the content effectively in order to motivate them in the study and students can improve themselves from their misunderstanding, who afraid for answering questions or asking questions which also help them. The teacher can screen all of the student's problem and improve their learning material.

The finding of this study shown that Students must be provided time to address the demands of the activity; resources must be readily available and meet all safety standards. Students should have opportunities to draft stage work and practice. Developing the criteria and the rubric and sharing these with students before evaluating a dramatic performance is critical before assessing student effort. Students can take their experiences in performance-based learning to use at later points in their educational, personal, or professional lives. The goal of performance-based learning should be to enhance what the students have learned, not just have them recall facts.

For the future, we are planning to adopt the e-learning website with other subject or making to the course. Improving the content from racking to improve learning skills, adapt learning material for each person by their skill.

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