

THE DEVELOPMENT OF MULTIMEDIA FOR LEARNING BASIC SKILLS OF JA-KHAY FOR GRADE 9 STUDENTS

Nantinee Nakdontree

Suan Sunandha Rajabhat University, 1-UThong Nok, Dusit Bangkok, Thailand,

E-Mail: nantinee.na@ssru.ac.th

ABSTRACT

Teaching and learning in music, the Ministry of Education has clearly integrated teaching and learning in schools. Every school emphasizes that children understand music theory and be able to put it into practice, which can be beneficial to the teaching of other subjects. A research article on the development of multimedia learning media for learning about basic skills in playing Ja-khay e has been prepared with the objective 1) to develop multimedia media for learning basic skills in playing Ja-khay and 2) to compare academic achievement before and after learning. The sample was randomly selected with 7 grade 3 students in the first semester of the 2023 academic year. The tool for collecting data is multimedia lessons for learning and academic achievement before and after class. Statistics used in data analysis include mean, standard deviation, and t-test.

The results of the research found that 1) lessons on multimedia for learning basic Ja-khay skills were of very good quality, and 2) students' academic achievement after learning was significantly higher than before learning 0.05

Keywords : Multimedia, Ja-khay, Thai musical instruments

INTRODUCTION

Educational management uses innovative media and technology for learning. Students can continue their research on their own. Nowadays, there are many different forms of media being produced, causing education to develop in leaps and bounds. Modern learners can use innovative media and technology as a common practice. Learning management using multimedia is learning management where teachers use multimedia as teaching media for teaching and learning in various subjects. Multimedia for learning is therefore a teaching media that is suitable for teaching conditions that are learner-centered, or learners are important (Natthasak Chanpetch et al., 2015) and multimedia media that presents content (Tutorials). This form of multimedia is the most popular format developed. This is because of the belief that the characteristics of multimedia computers should be a medium that will help make teaching and learning as effective as classroom learning. (Sarawut and Sudarat, 2020) They will act as teachers in the classroom or as lessons used to present content. The content may be new content that the learner has never studied before, or it may be a review of content previously studied in regular classes. The presentation of lesson content will be designed with a clear structure into categories or groups. Scripts and presentations combine text, images, or audio to enable learners to learn effectively while finding ways to guide and assist learners in achieving learning objectives. Lessons may also serve to assess learning outcomes by testing students with a variety of questions. (Alessi, S. M., & Trollip, S. R., 2001)

National Education Act 1999: Section 9 and teaching and learning, Sections 63 - 69. In summary, the duties on the part of teachers that must be performed in order to be consistent with the National Education Act are: 1) teachers must produce media, textbooks, materials, equipment, and technology for education in accordance with the needs of students and up to

date; 2) teachers must develop their own abilities as producers and users in order to make teaching and learning more effective; and 3) teachers must transfer technology knowledge to students so that they Learn to study, search for knowledge by yourself continuously throughout your life. Therefore, learning management methods should focus on creating inspiration and motivation. By using a variety of methods, such as using teaching media to present music practice techniques, students will be able to develop their skills better. In the Thai music course, teachers must teach both theory and practice, explain the details and then give students real practice and need to practice until they become proficient.

One thing that can help teachers' teaching be more effective is the teaching media that teachers can prepare to make students more interested in understanding the learning content, whether it be real media, videos, slide tapes, CD-ROMs, books, etc. And because there are many students in the class, this causes problems: teachers are unable to thoroughly teach students one-on-one, in terms of limited time, limited number of musical instruments, and individual differences. Some students learn quickly but others learn slowly, resulting in low achievement in music learning. (Ministry of Education, 1999).

The teaching and learning of the Basic Education Core Curriculum aims to equip students with five important competencies: communication ability, thinking ability, problem-solving ability, ability to use life skills, and Ability to use technology (Ministry of Education, 2008 :6). By dividing the learning subject into 8 groups: Art subject group, It is a subject group that emphasizes on providing students with knowledge and skills in initiative, imagination, creativity, art, aesthetics and artistic appreciation which is divided into 3 subjects: visual arts, music, and dance. As for music content, it is content that focuses on learners' understanding of various musical instruments used in mixing bands and creating different types of bands, understanding the relationship between music, history and culture, appreciating the value of music as a cultural heritage and local problems Thai and international wisdom. At the grade 9 , students must be able to explain the role, relationship, and influence of music on Thai society. Identify the variety of musical compositions in different cultures.

The curriculum for teaching Thai music is what the Ministry of Education specifies to be taught in each school, emphasizing that children understand Thai music theory and can practice it. Teaching Thai music can be beneficial to teaching other subjects because students who have the ability to play music must have patience, perseverance, use their intelligence to remember, and be enthusiastic to always seeking new things, which is a habit of every Thai musician. Therefore, learning Thai music is beneficial in both self-development (Sukhum Tiensuk, 2003).

The researcher, as a teacher of Thai music at grade 9 , Demonstration School Suan Sunandha Rajabhat University. From the past, it has been found that students are interested in learning how to practice Ja-Khay. Thai musical instruments, type of Ja-Khay, but students still lack knowledge and understanding of the basic skills of learning and practicing Thai musical instruments, which include zither characteristics, positions and symbols representing sounds, stringing Ja-Khay sticks, practicing various forms of Ja-Khay strumming. They are also unable to develop listening to music with understanding and appreciation for music. Therefore, in organizing teaching and learning to achieve the goals of the curriculum, it is very important to use multimedia in educational management. For students to understand the course content clearly, quickly, and help facilitate teachers in explaining, for example, sound, illustrations, and animations, the students can see the images as close to reality as possible, and create an interactive system that makes modern learning successful (Yuen Phuworawan, 2003: 47-48)

For these reasons, the researcher has developed multimedia for learning about the basic skills of playing Ja-Khay for grade 9 students. The researcher has summarized important content in the form of multimedia for learning with explanations, images and animated images therefore make it easier for students to learn resulting in better academic achievement.

OBJECTIVES

1. To develop multimedia materials for learning basic skills of Ja-Khay.
2. To compare academic achievement before and after studying with multimedia for learning.

LITERATURE REVIEWS

1. Robert Gagné (1985, referring to Sakda Sucharit, 2015) learned the theory based on the principle of content presentation. The nine teaching principles are: 1) stimulate interest before introducing the course content. 2) Inform students of learning objectives before class. 3) Review old knowledge, review old knowledge before introducing new knowledge to students 4) Present new content The images related to the content shall be presented, and a short, simple but meaningful explanation and the use of illustrations shall be attached. 5) A guide to learning. If there is a good content presentation system, and it is related to the learner's original experience or knowledge. 6) Stimulate the curriculum response. The effectiveness of learning is directly related to the level and stage of data processing. Participation in content related activities and answering questions will produce good memory. 7) Provide feedback through clear goals. Tell the students where they were and how far away, they were from the goal, and provide the above feedback information. 8) The new knowledge test is an opportunity for students to test their knowledge. 9) Summarize and apply. Summarize the concept of the topic, including suggestions, so that students could have the opportunity to review the knowledge.

2. Multimedia refers to the use of computers to display various media in the form of mixed media, with the focus on making learners see it. Select and listen to messages on your computer screen. Messages include letters, images, animation, and sound formats. And video, so that users can directly interact with the media and apply multimedia to education. Multimedia learning is a computer program designed for education. Use the computer as the basis of educational multimedia production and show the produced multimedia to students. Students only need to follow the ready-made procedures to learn or use to obtain complete content. Through the provision of interactive multimedia information (Academic Affairs Department, 2001:24) The process of multimedia design and development is to design the learning process according to the teaching objectives. Monchai Tienthong (2005: 131) indicates the ADDIE format This is a format widely used in computer curriculum development, covering the essence of computer curriculum design. All this is to create a multimedia computer course with the theme of "Color Sound Universal Instrument String". 1. By defining the goal of creating multimedia computer courses, the analysis work is divided into the steps of ADDIE format, that is, steps. 1 Analysis stage 2 Design stage 3 Development stage 4 Experiment stage Implementation and Evaluation Phase 5

Siriporn Phaisit (2020: abstract) has conducted a study – The making of audiobook and its results to improve learning achievement – types of Thai musical instruments for primary education student, 4th year (grade 4), Bang Kadi District Municipal School; it was found that 1) the created audiobook of types of Thai musical instruments had its efficiency of 82.92/83.44 in alignment with the required criteria – 80/80 2) post-test after utilizing the audiobook of types of Thai musical instruments yielded better learning result than the pre-test with statistical significance at 0.5 level.

Jariyavadee Chongchimplee, Prayuk Sriwilai and Panida Laochanwut (2016: abstract) has conducted the study – Development of computer multimedia instruction on Thai classical music ensemble for Prathom Suksa 6 students.; it revealed that 1) the created computer multimedia lessons of Thai classical music ensemble for Prathom Suksa 6 had its efficiency of

83.95/81.58 2) an efficiency index of each lesson on the computer multimedia was 0.6500, signifying that the learners made progress in learning or 65% 3) the students who learned with the computer multimedia lessons had higher learning achievement than the students learning with normal instruction with statistical significance at 0.1 4) the students who learned with the computer multimedia lessons had a better creative skill than the students learning with normal instruction with statistical significance at 0.1 and 5) the students who learned with the computer multimedia lessons had the satisfaction level towards the Thai music subject at the high level.

Pathompong Thamlangka and Chaiyapreuk Mekara (2015: abstract) has conducted the study – Creating multi-media computer assisted lessons for grade 6 music students: a case study, Thairutwithaya School 31 (Tungnaophutimaseuksakorn) Amphur Song of Phrae province, it revealed that 1) the students achieved 87.19% post-test score as per the assumption 2) the students achieved 81.41% average score of interclass review exercises as per the assumption and 3) the average satisfaction level of the student towards the computer-assisted multimedia lessons (music for grade 6 students) was 4.15, signifying the high satisfaction level as per the assumption.

Sujitrat Tiptarat (2015: abstract) has conducted the study – The development of multimedia instruction by cartoon in music subject for Prathomsuksa 1 students; it was found that 1) the efficiency in processes and outcomes of the developed multimedia instruction was 89.00/87.00 2) the average post-test learning achievement by utilizing the developed musical cartoon multimedia instruction for Prathomsuksa 1 (grade 1 students) was higher than the pre-test learning achievement with statistical significance at .05 level and 3) the analysis of students' satisfaction level towards the developed musical cartoon multimedia instruction for Prathomsuksa 1 (grade 1 students) yielded a high result ($\bar{x} = 2.94$ and $S.D = 1.45$)

METHODS

Population and sample

1. The population used in the research is students of Suan Sunandha Rajabhat University Demonstration School, grade 9 , in the first semester of the 2023 academic year.

2. The sample group used in this research was seven students of Suan Sunandha Rajabhat University Demonstration School, Secondary Division, grade 9 in Semester 1, academic year 2023, by random sampling (Purposive Sampling).

Research instrument and Validity/reliability

The researcher proceeded with the creation according to the following steps:

1. Multimedia that affects academic achievement on the topic of basic skills in strumming Ja-Khay. Through the Internet, there are 4 content topics: characteristics of the Ja-Khay, positions and symbols representing sounds, tying the Ja-Khay sticks, practice strumming the Ja-Khay in each format developed from the power point program, a test from the Google Form program, navigation Offer approximately 5 minutes.

2. Evaluation of the quality of multimedia media that affects academic achievement in multimedia media for learning concerning the basic skills of strumming Ja-Khay over the internet, the assessment topics were divided into 4 main areas: content quality, image and sound design quality, color and font quality, and technical quality and methods. There were 3 people evaluated on a 5-level scale.

3. Multimedia learning achievement test for learning about basic skills of Ja-Khay. The researcher proceeded as follows.

3.1 Study of textbook documents related to basic skills of Ja-Khay. Study how to create an achievement test. Analyze content according to learning objectives.

3.2 Create a test to measure academic achievement to cover the content according to the objective and be multiple choice 4 options, 20 questions.

3.3 Take the created test to 3 experts to check its accuracy and content coverage. Determine the index of the consistency of the test with the learning objectives. Then it was revised and improved according to the advice of experts.

3.4 Take the revised test according to the experts' recommendations and present it to the expert's reconsider.

3.5 Take the revised test and test it with a sample group of 5 people who are not the actual sample group. Evaluation of the academic achievement test index on the development of multimedia media for learning. Regarding the basic skill of strumming Ja-Khay, 20 questions, multiple choice, 4 options, by 3 experts, it was found that the index of consistency of the test with the learning objectives (IOC) was equal to 0.67-1.00, which is direct and usable. The test can be used with students further.

Data collection

The researcher proceeded to collect research data as follows.

1. Select the target for this research: 7 students of Suan Sunandha Rajabhat University Demonstration School, grade 9 level, in the first semester of the 2023 academic year.

2. Organize an orientation on the teaching and learning process. Explain details and terms of study to students.

3. Arrange a pre-study evaluation test. Multimedia for learning About the basic skills of strumming Ja-Khay which is a multiple choice, 4 options, total of 20 questions. Then test scores are recorded.

4. Organize a post-study evaluation test. Multimedia for learning Basic skills in strumming the Ja-Khay which is a multiple choice, 4 options, total of 20 questions, then test scores are recorded.

Analysis

In this research, the researcher analyzed the data and checked the quality of the tools in the following order.

1. Basic statistics used to analyze data by finding the mean, standard deviation, statistics used to analyze learning achievement, finding relative gain scores, and finding developmental scores.

2. Statistics used to check the quality of the tools by finding the index of concordance (IOC) of the learning achievement test with the learning objectives.

RESULTS

The objective of this research was to develop multimedia media for learning basic skills of Ja-Khay for grade 9 students at Suan Sunandha Rajabhat University Demonstration School. The data analysis results were as follows.

Part 1: The results of the development of multimedia media for learning about the basic skills of playing Ja-Khay for grade 9 students. It was found that

Table 1 Results of quality assessment of multimedia lessons for learning basic skills of Ja-Khay.

Assessment	\bar{x}	S.D.	Quality level
Content	4.63	0.51	Very good
Visual and sound design	4.45	0.46	Good

Assessment	\bar{x}	S.D.	Quality level
Color and letters	4.60	0.48	Very good
Technical aspects and methods	4.44	0.43	Good
Average	4.56	0.48	Very Good

From Table 1, the results of the quality assessment of the multimedia development lessons for learning found that the overall quality was at a very good level. ($\bar{x} = 4.56$, S.D. = 0.48) When considering each aspect, it was found that the experts' opinions on the quality of content were at a very good level ($\bar{x} = 4.63$, S.D. = 0.51), visual and sound design were at good level ($\bar{x} = 4.46$, S.D. = 0.46), colors and letters were at a very good level ($\bar{x} = 4.60$, S.D. = 0.48), and technical quality and methods at a good level ($\bar{x} = 4.44$, S.D. = 0.48).

Part 2: Comparison of academic achievement before and after studying with multimedia development lessons for learning about basic skills in strumming Ja-Khay for grade 9 students

Table 2 results of comparative analysis of academic achievement before studying (Pre-test) and after studying (Post-test)

Test	n	\bar{x}	S.D.	t-test	Sig.
Pre-test	7	12.50	1.45	13.44	0.05
Post-test	7	16.90	0.96		

Note: Statistically significant at the 0.05 level.

From Table 2, it was found that the average academic achievement score before studying was 12.50 with a standard deviation of 1.45 and the average score after studying was 16.90 with a standard deviation of 0.96. The t-test score was 13.44 and Sig. value is 0.05, a difference with statistical significance at the level of 0.05, with the average score after studying being higher than before studying.

DISCUSSION

1. From the development of multimedia lessons for learning the basic skills of Ja-Khay for grade 9 students, the overall average quality is at a good level. From the teaching and learning of the multimedia lessons as follows: It can be said that students can choose to study according to their needs, either studying additional new knowledge or reviewing previous knowledge. This is a new learning experience for students. The results of the study are consistent with the theory of Ritthichai Onming (2004) who mentioned the format of multimedia lessons for learning, training, drill and practice method. Teaching with emphasis on skill training and practice, allowing students to practice step by step, not skipping steps, from initial training to further advanced skill training. Tutorial Method is a format that has similar duties to a teacher, where multimedia lessons are designed with opportunities for students to directly interact with the multimedia. Students can guess the answer or try to answer with multimedia. The quality of lessons that use principles of student participation and can be adjusted to suit different student differences. Creating a multimedia lesson program in such a format is as effective as organizing learning teach with a teacher as an instructor. This is also consistent with Pathompong's research. Pathompong Thammalangka and Chaiyapruet Mekhra (abstract: 2015) found that creating a multimedia computer-aided teaching lesson in music for grade 6 students: a case study of Thairath Wittaya School 31 (Thung Nao Phutthima Suksakarn) Song District, Phrae Province. It was found that 1) students had an average post-test score of 87.19%, which was in line with the hypothesis, 2) students had an average score of 81.41% in

doing review exercises during class, which was in line with the hypothesis, 3) Student satisfaction with towards computer-assisted multimedia lessons of students learning with computer-assisted multimedia instruction in music for Grade 6, with an average of 4.15, at a very satisfied level which is based on the assumption.

2. Academic achievement of students who study with lessons Multimedia for learning developed after studying higher than before studying with statistical significance at the .05 level. Because the researcher conducted a test by having students take a pre-study test and a post-study test to compare their academic achievement. It shows that the students have knowledge and understanding of the content they are learning. They gain direct experience in learning, namely seeing how to perform and hearing the sounds made by real musical instruments. This allows learners to receive complete knowledge and can recall the information back to view again when needed. In addition, multimedia lessons can reduce the problem of individual differences. The results of the study are consistent with the research of Nirun Jamarun (Abstract: 2018) who created video media for self-learning in the practical subject of Thai Music: Ranad Ek 1 for students in the Thai Music Department, Fine Arts Curriculum. Using the research methods of qualitative research. This is the creation of the Ranat Ek track, which is the result of the sedimentation of the researcher's ideas. This Ranat Ek track was created from the experience of learning with music teachers such as Teacher Bunyong, Teacher Bunyang Ketkong, Teacher Pinit Chaisuwan, Teacher Venus. Kaewkanok, Teacher Thiraphon Noinit and Father Jarin Jamarun. The results of the research were video media of the 5 songs of the Ranat Ek set of Prelude to Morning and 4 songs of the Thap Ton and 3-layer cymbals set for self-learning. The video has three main contents: the first part is the basic history of the song, and the second part is the playing of the xylophone and the basic melody of the large gong that is played continuously. and the third part playing the xylophone and the basic melody of the big gong in the form of a song.

RECOMMENDATIONS

Results of this research study, there are suggestions as follows.

1. Organizing teaching and learning through multimedia lessons, teachers should study the content and organize courses including the use of multimedia to be able to organize various activities in the lesson effectively

2. Teachers should use innovative media and other technologies that are modern for use in other lessons or develop it to suit the learners.

3. Other types of traditional Thai musical instruments or bands should be introduced. Folk musical instruments to create multimedia lessons as a knowledge base for students to be able to search on their own.

ACKNOWLEDGEMENTS

This research owes its success to the contributions of many people. Most appreciations go to those experts for their advice and also to Suan Sunandha Rajabhat University for their valuing this research and funding support. Special thank also go to participating

REFERENCE

Department of Academic Affairs (2011). Knowledge about multimedia for education. Bangkok: Academic Department Book Development Center Ministry of Education.

- Ministry of Education. (1999). National Education Act. 1999, Section 9, Technology for Education, Section 63-69, and amendments (No. 2) B.E. 2002. Teachers' Council of Ladprao Printing House. Bangkok.
- Ministry of Education. (2008). Basic Education Core Curriculum 2008. Ministry of Education
- Jariyawadee Chongchimplee, Prajam Sriwilai, Panida Laochanwut (2016). Development of multimedia computer lessons about Thai music bands For Grade 6 students. Journal of Humanities and Social Sciences Mahasarakham University
- Natthasak Chanphet, Wallaya Thamphiban and Jintana Kasinan. (2015). Development of computer-aided lessons. Teach a programming course on programming robot controls. For secondary school students Year 5. Narathiwat Rajanagarindra University Journal, 7(1): 106-114
- Nirun Jamarun. (2018). Create video media for self-learning in the practical subject of Thai music: Ranad Ek 1. Sak Thong : Journal of Humanities and Social Sciences Kamphaeng Phet Rajabhat University.
- Pathompong Thamlangka and Chaiyaphruek Mekra. (2015). Creating multimedia computer-assisted instruction lessons music subject for 6th grade students: A case study of Thairath Wittaya School 31 (Thung Nao Phutthima Educator), Song District, Phrae Province. Ubon Ratchathani Research and Evaluation Journal Ubon Ratchathani Rajabhat University.
- Yuen Phujawarawan. and Somchai Namprasert. 2003. IT for Thai education. Bangkok: SE-ED Education.
- Siriporn Praisit (2020). Results of creating audiobooks to develop academic achievement. About the type of machine Thai music for 4th grade students at Bang Kadi Subdistrict Municipality School. academic conference national level "Education for Learning Development No. 4" year 2020 (via Online).
- Sujitrat Thiptharat (2015). Subject: Development of cartoon-style multimedia lessons for music subjects for students Primary Year 1. Graduate Thesis in Educational Technology, Silpakorn University.
- Sukhum Tiensuk. (2003). Thai music.teaching that should not be forgotten. (Online). Source: <https://www.nectec.or.th/schoolnet/library/create-web/10000/arts/10000-8903.html>
- Sarawut Yamdee, Sudarat Srima (2020) The Development of computer multimedia on vocational and technology subject by packaging design for Demonstration school of Suan Sunandha Rajabhat University's students. [Online]. Available:<http://icbtsproceeding.ssru.ac.th/index.php/ICBTSLUCERNE2020/article/view/473/466>.
- Alessi, S. M., & Trollip, S. R. (2001). Multimedia for learning: Methods and development (3rd ed.). Boston: Allyn & Bacon.