



The Development of Learning Media for Enhancing Music Theory Efficiency of Undergraduate Students in Western Music Program

Chutamas Hirungool¹, Pongpob Sukittiwong²

Abstract

This research was an effort to enhanced music theory efficiency of undergraduate students in western music program of Chandrakasem Rajabhat University. The development of new learning media tends to resolve several limitations of teaching such as plenty of content and students in a classroom, lacking media, and a student's readiness. The objectives of this research were: 1) to study and develop music theory learning media for students in western music program and 2) to evaluate a quality of learning media. The methods of a study divided in two parts, First part began with a study of first year student's conditions and needs. Data collecting by questionnaire, interview, and music theory test, therefrom, The music media was developed based on the results. Second part was an implement and evaluation of music learning media to 25 students quota selected form first year students. Data collecting by pre and post-test of music theory competency, and questionnaire of student's satisfaction. Data analyzing by descriptive statistics, Inferential statistics (T-test for dependent Samples) and content analysis. The results of the study were: 1) Most of students (84%) would like to get new design of learning media in music theory. Students suggest that the features of learning media should be instructional videos, website, sound recording and exercises that based on online accession. The developed music learning media consist of core conceptual instructional video, detailed supplementary instructional video, e-document exercises, and websites. The content of media divided on 4 units such as writing and identification of basic musical notations, rhythms, scales, and intervals. 2) The post test score ($M = 85.78$, $S.D. = 7.23$) significantly showed music theory learning outcomes higher than pretest score ($M = 45$, $S.D. = 23.83$) at .01 level. The average student's satisfaction with the websites was at high level ($M = 4.44$, $S.D. = 0.65$), with the lesson videos was at high level ($M = 3.86$, $S.D. = 0.77$) and with exercises was at high level ($M = 3.67$, $S.D. = 0.91$).

Keywords: Learning Media, Music Theory, Efficiency;

Introduction

Music Theory is a necessary core subject in a higher education music program. It is a study of musical elements in various aspects, such as rhythm, melody, harmony, forms, etc. Therefore, It is basic knowledge for reading, writing, analyzing and creating skills that use for music concepts learning from basic to advance level. In addition, It also improves musicianship that is an important characteristic of expertise musicians. Currently, music theory appears in every professional music curriculums in Thailand.

Chandrakasem Rajabhat University initially established Western Music Program in undergraduate degree since 1978. The program aimed to provide graduates with music expertise, professional experiences and music technological competence. In current curriculum, Bachelor of Arts Program in Western Music, Faculty of Humanities and Social Sciences, Chandrakasem Rajabhat University, The core music theory was divided into 4 subjects, such as Basic Music Theory, Music Theory I, Music Theory II and Music Theory III. The content in each subjects were connected and continuous. Moreover, the content was connected with other music subjects. For example, ear training, counterpoint, orchestration, composition and major musical instruments.

So anyway, there were some problems and limitations that made several students had incomplete learning outcomes in music theory. The initial interview and observation showed relevant issues that can summarized as follows:

1) Some students did not have enough readiness for learning because some of them had to play music at night as a part time job. Sometime they missed class and come to class late, and can't learn efficiently. They can't follow a lesson and review by themself.

¹ Chandrakasem Rajabhat University, Thailand

² Chandrakasem Rajabhat University, Thailand

2) There was not enough academic music theory learning media in Thai. Most of them were developed in form of textbooks and workbooks. The complicated academic writing style was not suitable with the nature of Thai music learners who love to learn by watching, listening, and doing more than reading.

3) Teachers had too many tasks from lecturing and checking homework that had much details of content from many students in classroom. They did not have enough time to monitoring the student's progress and assisting students individually.

Nowadays, technology and media have become a part of new generation student's life. The new learning media may reduce these problems and limitations because sound and motion picture was suitable with student's learning style. The media that always online was easy to access everywhere and every time. students can repeat the lessons as they wish. These been useful for both preparing and reviewing the lessons.

For that reason, this research aimed to studied and develop music theory learning media for students in western music program and evaluate a quality of learning media. The content focused to 4 units such as notation, rhythms, scales, intervals. these were literature reviewed and discussed by teachers deliberately covering essential content for first year student in our contexts.

Methods

This research aims to create effective music theory learning media by research and development processes. The study was conducted in Chandrakasem Rajabhat University at Bangkok. Methods of a study divided in two part, First part was study and development of music theory learning media, Second part was an implement and evaluation of music theory learning media. Details were as follows:

1. The Study and development of music theory learning media

The study used a quantitative approach. 72 1st year student in western music program became the subjects of study. The instruments used for data collection were: Questionnaire and interview form was used for student's needs and conditions assessment, Music theory test was used for basic music theory competency test in area of notation symbols, rhythms, Intervals, and Chords identification and writing. The qualitative data was analyzed for its validity using index of item objective congruence by 3 music experts. The information collecting was summarized by using descriptive statistics such as frequency, percentage and mode. The result was used to design the music theory competency criteria by group discussion together with music teacher in department. Learning media were designed and appropriately developed with the music theory competency criteria and student's conditions. The music theory learning media was trialed with several second year students.

2. The implement and evaluation of music learning media

One group pretest posttest design was adopted for the study. 25 first year students were quota selected to be subjects covering 8 high score students, 8 medium score students, and 9 low score students considering to the music theory test from first part. The instruments were tests and questionnaire. Music theory learning media were implemented in classroom for 7 weeks, 2 hours per week. Music theory competency was assessed before and after the implement. Subjects were evaluated the satisfaction after test. The collected information was summarized by using inferential statistic was t-test for dependent samples and descriptive statistics such as frequency, mean and standard division. Qualitative data was considered by content analysis. The results were used to improve several incomplete aspects of music theory learning media.

Results and discussion

1. The development of music theory learning media

The study of the student's needs and conditions showed the information that became issues for media designing. It can explain in some interesting points such as: 1) 51 students (84 %) would like to get new design of learning media in music theory class 2) Most of them (37 students, 52 %) learned music theory by themself before enrolling to the program and most of them (31 students, 44 %) spent less than 6 months for preparing to the program. these showed a lack of foundation in music theory learning. 3) Most of students (30 students, 50 %) suggested that efficiency learning should be within 1-2 hours, and instructional video, website, sound recording, exercise were the best for music theory learning media respectively. 4) Interval and scale were content that student have the test score as low level.

The forms of music theory learning media includes: core conceptual instructional video, detailed supplementary instructional video, e-document exercises, and website. Developer used a free online services for learning media constructing and conducting such as Wix (www.wix.com) for web hosting,



Google site for data storing and sharing to students. Content was divided into 4 units such as writing and identification of basic musical notations, rhythms, scales, and intervals. Instructional videos have a length within 5 - 30 minutes, and not over than 2 hours for one lesson part. Infographics characters such as the classical musician, music teacher, rock musician were used within videos for explaining the music theory principle in each context. (Fig 1)

Fig 1. Using infographics in the instructional video



Keyboards and musical symbols were drawn into graphic form showed together with sound explained from instructor for principle demonstrated. (Fig 2) Intro and outro of video used the same short movie show introduction and ending point. In addition, computer screen recording videos were used to demonstrate how to write the musical symbols in depth.

Fig 2. Using of musical symbol graphic in instructional video



E-documents exercises and answers were developed together in form of PDF files that stored in Google drive. Students can access with URL links were embedded in website. They can download and print for practice everywhere. The exercises were arranged into sub-sections under the part of content. The difficulty was sorted simply to complexly. Music symbols notation and letters writing were used to be answer form in the exercises. (Fig 3)

Fig 3. The e-documents exercise and answers



แบบฝึกหัด 1.2 บนโดเสียงเมเจอร์

ชื่อ-สกุล _____ รหัสนักศึกษา _____ กลุ่มเรียน _____

ตอนที่ 1 จงเขียนโน้ตบนบันไดเสียงเมเจอร์ต่อไปนี้ ในรูปแบบ Accidental

1. G Major
2. Ab Major
3. E Major
4. D Major
5. F# Major
6. Bb Major

เฉลยแบบฝึกหัด 1.2 บนโดเสียงเมเจอร์

ชื่อ-สกุล _____ รหัสนักศึกษา _____ กลุ่มเรียน _____

ตอนที่ 1 จงเขียนโน้ตบนบันไดเสียงเมเจอร์ต่อไปนี้

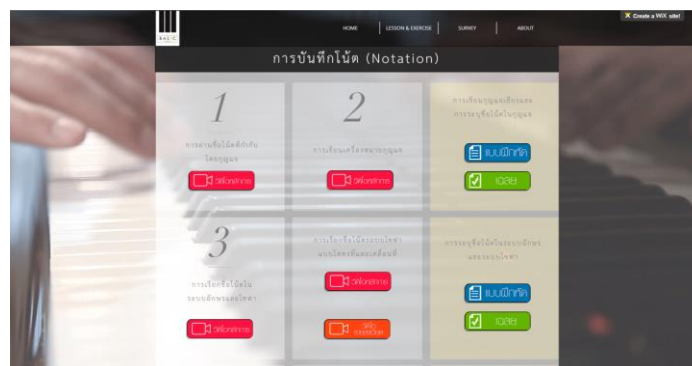
1. G Major
2. Ab Major
3. E Major
4. D Major
5. F# Major
6. Bb Major

The website was temporarily published for the research on WIX web hosting. The website complements include 4 sections. Home was the first section students can access by URL (Fig 4). This section was main page for other sections organized. Infographic symbols were used for informing sign to the other sections with URL link embedded. In lesson & exercise section was divided into 4 parts according with content parts. Each part shown the sub-part that URL link of core conceptual instructional video, detailed supplementary instructional video and e-document exercises were embedded (Fig 5). Different icon and color were used to show the functions of URL link explicitly. Survey section was used for receiving feedback from students. About section was used to inform the contract of media developer and the objectives of this media.

Fig 4. Website: home section



Fig 5. Website: lesson section



2. The evaluation of music learning media

Pre-post tests were used to find the effectiveness of the music theory learning media on comparing of score. Note: The full score was 100 point.



Table 1. Comparing of music theory pre and post-test score

Subjects (n=25)	Pre-test score		Post-test score		t	Sig.
	Mean	S.D.	Mean	S.D.		
music theory learning outcome	45	23.83	85.78	7.23	11.35*	.00

Music theory learning media can improve the student's learning outcome efficiently. The post test score (M = 85.78, S.D. = 7.23) significantly showed music theory learning outcomes higher than pretest score (M = 45, S.D. = 23.83) at .01 level. The average pretest score at 45 point showed that most of student didn't have enough music theory learning outcome before learned with learning media. Although the pre-test SD score at 23.83 showed variety of music theory learning outcome from the mixed quota selection covering various level, After implementation the post test score was reduce to 7.23. This showed the efficacy of media to enhancing music theory efficiency of undergraduate students appropriately.

Table 2. Student's satisfaction with learning media

List	Student's satisfaction		
	Meas	S.D.	Level
Websites	4.44	0.65	High
Lesson video	3.86	0.77	High
Exercises	3.67	0.91	High

The study of student's satisfaction to the music theory learning media can summarize into 3 issues. Firstly, the average student's satisfaction with the websites was at high level (M = 4.44, S.D. = 0.65), Accessibility was the highest satisfaction average score at highest level (M = 4.80, S.D. = 0.41) and The suitability of content organizing was the lowest average score at high level (M = 4.00, S.D. = 0.96). Considering with qualitative information showed that the websites were a platform that be easy to access with smart digital tools. The category of content should be developed to the effective search engine and keyword organizing in each video content.

The average student's satisfaction with the lesson videos was at high level (M = 3.86, S.D. = 0.77). However, Students suggested that the lesson videos should be improved the sound quality (M = 3.84, S.D. = 0.93) and the interesting of sound and picture (M = 3.55, S.D. 0.92).

The average student's satisfaction with exercises was at high level (M = 3.67, S.D. = 0.91). They suggested that the content should cover the details and technique in music theory Increasingly. In addition, researcher should develop the form of exercise to the online electronic exercise that it can check and feedback a score to students by themself.

References

- [1] Palisca, C. V. (2001). *Theory, The new grove dictionary of music and musicians*. New York: Oxford University Press.
- [2] Suttachitt, N. (2012). *Music education: principles and Essentials (9th eds.)*. Bangkok: Chulalongkorn University Press.
- [3] Faculty of Humanities and Social Sciences, Chandrakasem Rajabhat University. (2011) *Bachelor of arts program in western music 2011 B.E*. Bangkok: Author.
- [4] Benward, B. and Saker, M. (2009). *Music in Theory and Practice (9 th Ed.)*. NY: McGraw-Hill.
- [5] Faculty of Education, Chulalongkorn University. (2006). *Music theory curriculum 2549 B.E*. Bangkok: Author.
- [6] Jones, H. (1985). *Theory of Music Workbook (Grade 1-4)*. n.p.: Trinity College of Music.
- [7] Ounkaew, S. (2012). *Music theory and practice (9th Eds.)*. Bangkok: S. Asia Press.
- [8] Pancharoen, N. (2010). *Music theory (9th Eds.)*. Bangkok: KateCarat Press.
- [9] Pratchyanusorn, P. (2000). *Music theory treatise (6th Eds.)*. Bangkok: Compact print.