

Interactive Multimedia base Mobile Learning for Health : The Creative Media Design of “Acne is a health Indicator”

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Abstract— Abstract This research studied media. The purposes were 1) to provide accurate information to those who had acne problems so that they could have proper acne treatment by themselves, 2) to help teenagers to have more understanding about acne and could give advice to others affected by the same problems. The research was advised, examined, and evaluated by advisors and experts in the relevant fields. The sample group was twenty seven undergraduate students of Medical Media and Science Programme, Media Arts Department. The research tools included lessons on acne issues, an achievement test, and a survey questionnaire on learners' satisfaction towards the lessons. The result of On visual and audio evaluation, the average scores given by the target group were equal at 3.88 with S.D. 0.62 (satisfactory level) The average score on the content aspect was the highest, The content is easy to understand score was 4.26 with S.D. = 0.71 (satisfactory level) The average score on the creative media design as the target group thought the media made them understand more of the benefits

The study showed that the learners had more understanding about acne. The lessons' content was evaluated as 'satisfactory' by the expert for it was accurate and appropriate for the target group. The visuals and narration of the lessons were also evaluated as 'satisfactory' by the technical expert. The sample group gave good response to these media. The media can be used as informative source of acne issues and developed further.

Keywords— Mobile Learning, acne, health indicator,

Interactive media

I. INTRODUCTION

Nowadays various forms of pollution are pervasive in our environment. Pollution is considered one cause of acne. Acne can be encountered by people of all genders and age groups, especially teenagers. It is seen by many people as a big problem, and some use wrong methods of treatment to deal with the problem.

Acne is the most frequent problem of skin disease. One cause of acne is hormones as they stimulate sebums to produce excessive oil. This can lead to comedones problem. If these comedones are infected with bacteria, they will become inflammatory acne and finally a pus. However, acne can be cleared if treated properly. [1]

According to the Office of National Statistics, 20% of 12 million people age 14-25 have spent a huge amount of money for acne treatments. The average expense for one

treatment is 600 baht. It normally needs three treatments per month and three months for the whole process. From this information, one person spends approximately 5,000 baht for acne treatments. In fact, acne problems can be dealt with by themselves.

MOOC [2] approach looks like the conventional class, it includes 'open' and 'close' time and the subtopics are included in courses, as well as measurements and evaluation, homework and activities assignments. MOOC tool implemented is simple technologies such as websites, videos, and blogs, etc.

Massive Open Online Course (MOOC) [3] is an innovation in the world of education that uses the technology accessed by people around the world through the Internet and computer systems as the teaching aid. MOOC does not limit the number of learners and has no registration fee. It is a correspondence course in real time using online technology as a learning instrument. Learning is possible anytime and anywhere as the learners need, and applying for diploma is not needed, helps develop personnel in building knowledge, and promote a culture of participation.

Wireless network technology [4] is capable of high-speed data transmission. It is the golden age of mobile learning (M-Learning) that students can connect personal communication devices to the wireless network to choosing the programs and course registration, studying a lesson, practice exercises, and taking exam for measurement and evaluation, as well as the interaction with other learners or lecturers synchronously and learning can proceed from at home. Therefore, the awareness of this problem has come into the researcher's mind, the interactive instructional materials concerning the acne have been carried out; the main focus of the interest is a novelty to draw an attention of the target group of the teenagers especially. It is an innovative teaching multimedia using the distinctive presentation that meets the needs of teenagers in the digital age.

A. It exposes an opportunity to the disadvantaged persons in education

1.1 Research Objectives

To study the effectiveness of the Interactive Multimedia-base Mobile learning for Health : The Creative Media Design of “Acne is a health indicator”

1.2 Hypothesis

In the design of the “ Interactive Multimedia-based Mobile Learning for Health : The Creative Media Design of “ Acne is a Health Indicator” , the massive open online course (MOOC) was adopted; it takes less than 5 minutes each lesson in drawing the attention of the learners that they may understand that acne is a health indicator.

BACKGROUND INFORMATION

Theory of Mobile Learning

It is a mobile learning management system in which communication technology like mobile phone is used as a medium for learning management and the instructor is responsible detailing learning content that consists texts, video, and audio to increase knowledge and enhance the corresponding learning skills to the learners appropriately and the learners can learn wherever and whenever they want over the internet. Mobile learning includes three parts; instructor, learner, and administrator. Before becoming the mobile learning, it has been evolved from D-learning and E-learning which its objectives are different.

Distance learning (D-learning) or distance education [5-7] is a way of studying through electronic media. Mobile learning (M-learning) is an educational system in which teaching and learning is carried out via mobile devices like smartphone.

Distance Education Theory

It is a way of studying that students learn through blended media in teaching and learning system and they can access to education efficiently, and it is an independent learning. It is a form of distance learning management that uses the communication technology accessed via the internet as a medium for presenting and conveying knowledge as well as audio-visual presentation. It enables the learners to discover their own capabilities and learn by prioritizing content they want at the learner’s appropriate schedule and time, thereby leading to generate meaningful learning. Distance education encourages and supports learning anywhere and anytime through the combined media application like documents, audiovisual materials, and electronic media, as well as personal media that help in teaching and learning management

MOOC is categorized into two types: “cMOOC” (connectivist MOOC model), the teaching outline includes the distributed social network and emphasizes the independence of the learners, especially the adult lifelong learners who are interested in self-development and occupation. This model involves Social Learning Theory such as social constructivism and xMOOC (Stanford Artificial Intelligence: AI model). In teaching style, it applies the traditional teaching and online courses. This teaching style is categorized into as ‘cognitive-behaviorist’. There are currently major MOOC providers in the United States, including edX (www.edx.org), which MOOC has been most popular, the ‘Coursera’ (www.coursera.org) is the largest MOOC, the Udacity (www.udacity.com) is the charming MOOC, the ‘ Khan Academy’ (www.khanacademy.org) is a MOOC of India that offers video teaching materials that are easy to understand and supports learners of various ages.

A. Documents and related research

The findings of the study were as follows:

Advantages and Disadvantages of M-Learning

Study The process of “Classroom Learning Outcomes with Online Mobile Learning through Learning Cycle in Multicultural Society” [8]

Advantages:

The instructors can improve their traditional classroom learning with online m-learning and the learning cycle in the multicultural society can be applied to other classes.

Disadvantages: The subjects which learning score do not pass the Ordinary National Educational Test (O-NET) should be improved.

Study The process of “The Effects of Self-Directed Learning Activities Using Mobile Technology on Information Reception of the Non-formal and Informal Education (NFE) Students” [9]

Advantages:

1. The voluntary samples are permitted

2. Mobile learning technology stimulates learners to learn infinitely and it has no restrictions on space and time that the instructors and learners can communicate with each other immediately and attending class is not needed.

Disadvantages:

1. It may experience the restricted scope of the application if the internet signal stays unstable.

2. The expanded learning outcomes on information increase knowledge and skills of using information.

Advantages and Disadvantages of Massive Open Online Course (MOOC)

Study The process of “ The Development of RMU MOOC Application for Project-based Learning” [10]

Advantages

A variety of learning activities are included.

Disadvantages

The content should be added and the designated media should be more interesting.

, Study The process of “MOOC: Massive Open Online Course in Digital Age. [11]

Advantages

1. The viewpoints of the innovation turn to concentrate on the effective implementation of technology.

2. The cost is relatively low compared to more expensive enrollment of regular education programs.

Disadvantages

1. The levels of measurement are different between the informal education and traditional education; the MOOC students are required to participate in the activity as assigned and they must take the exams at the learning center provided under the cooperation with the partner organizations, thereby some students are more likely to choose the informal education

II. METHODOLOGY

A. M-learning application processes

MOBILE LEARNING (M-LEARNING) [12-13]

There are 4 key components for M-learning.

1. MLMS (mobile learning management system) is a mobile learning management system with the part of the instructor and the part of the learner. Learners will log in to study the course content prepared by the instructor. Administrators will manage and supervise all functions to facilitate the learners e.g. file size or data access due to bandwidth limitations.

2. m-content is the content used for mobile on the basis of AIDDE model in the design process. Multimedia e.g. still and motion graphics as well as sound are used to understand the content. The video size needs to be small to allow the motion graphic to be easily shown on phone screens and files to be quickly downloaded.

3. MCMS (mobile content management system), which acts like a CMS in e learning, but its images and sound are downsized for mobile presentation.

4. m-testing is in the part of the lesson evaluation to assess the learned knowledge. Pre-test and post-test are used to compare the results of the study.

instructor-designed activities. Thank you for joining the team in contributing creative ideas and produce works successfully and thank for the technical and program advice.

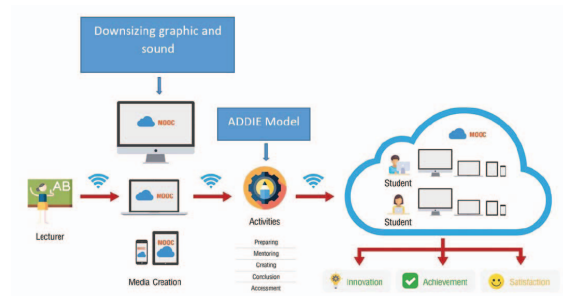


Figure 2. M-learning application processes

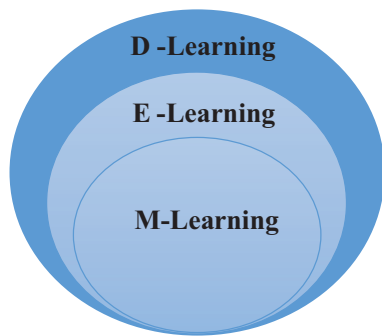


Figure 1. Methodology

1. The MOOC is a choice of the instructor; the lesson content contains six topics: 1) the development of acne, 2) causes of acne, 3) genetics of acne, 4) acne is gone, 5) 'Do' and 'Don't', and lastly, 6) position of acne as disease indicator. The various narrative styles are applied suitably to the interest of the learners (Figure 2). In this study, the motion graphic was adopted. The individual character is unique in conformity to the type of acne on the module 1,2,3,4, and 6. The music videos were introduced to invite singing and remembering the lyrics in response to the target teenagers' attention. The content was been in synthesis within 5 minutes by the videos teaching the material. After watching, then take the quiz. Module 5 movie video; the actor is a dermatologist demonstrating how to care for acne-prone skin when getting acne. The designed props included paper and real objects simulation using the design principles of visual attenuation, and selection of bright colors. The content design of the 6 modules adopts the storyboard as shown in Figure 3 and 4; the instructor analyzed the learner's perception and preferences. The Communication Theory was adopted to assist in analyzing content according to the ADDIE Model, which it is divided into 5 stages; 1) analysis, 2) design, 3) Implement, 4) development, and 5) evaluation. Once completed, take the quiz or follow the

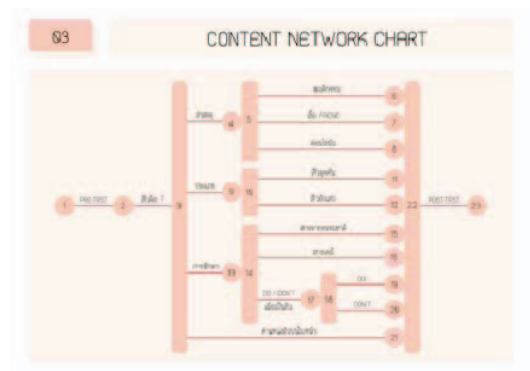


Figure 3. The processes design of module presentation

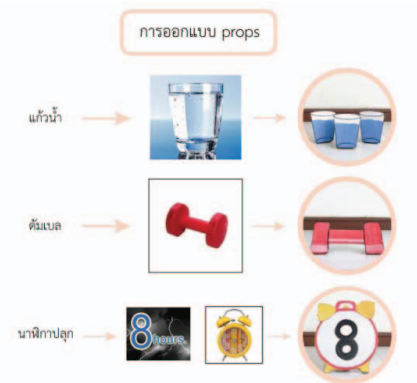


Figure 4. The processes design prop to video content on do and don't when was acne.

MWD 342	ตัวจริง... ชื่อจริง... เลขที่ 3... ชั้นปีที่ 2	ชื่อไฟล์... ผู้เขียนบท... ผู้กำกับ... ผู้บรรยาย... ผู้ตรวจสอบ... วันที่รับทราบ... ๒๕๖๓/๐๘/๒๕
รูปประกอบหน้าสอน <input type="checkbox"/> ข้อความ <input type="checkbox"/> ภาพนิ่ง <input checked="" type="checkbox"/> แอนิเมชัน <input type="checkbox"/> วิดีโอ <input checked="" type="checkbox"/> เสียง		หมายเหตุ... เรียนบร... เราทำสิ่งนี้ได้เพราะเราทำ... ระบบย่อย ระบบชั้นอาจารย์สามารถ... แนะนำ

Figure 5. The storyboard was design to develop .

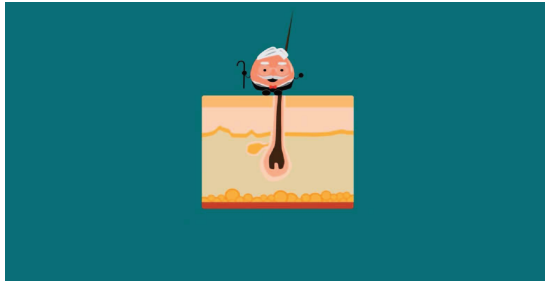


Figure 6. The display video content

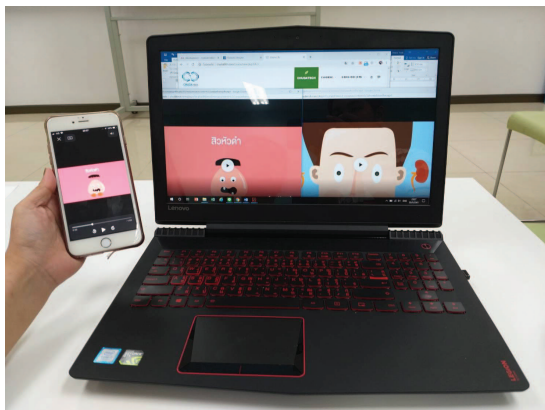


Figure 7. The display mobile was learning device

Table 1 The comparison of conventional course and m-learning course

Learning aspects	Conventional Course	m- learning Course
Quality of teaching	Quality of teaching depends on each individual teacher as of a different teaching technique and experience.	Quality of teaching is similar. The learning benefits depends on each learner.
Self-study learning	Learners have less self-study as they tend to forget after classes.	Learners have more opportunity to do self-study as they can access to links provided immediately.
Person-to-person encounter	Learners can encounter with others in real class	Learners can encounter with others in online class if the class environment is

in classes	environment.	well designed with good network.
Class Attendance	Class tendance is necessary as all learners and teacher must attend classes at the same time for learning together.	Class attendance is not required as learning is subject to each individual. Each learner can select the time of their own convenience to access the lessons.

For the evaluation of quality and satisfactory level of sample, researchers calculate for the Mean Score and Standard Deviation score and present them in tables.

The formula to calculate Standard Deviation is as follows

$$SD = \sqrt{\frac{n \sum_{i=1}^n X_i^2 - (\sum_{i=1}^n X_i)^2}{n(n-1)}} \quad (1)$$

When SD = Standard Deviation

n = The total number of items

X_i = Rate of each Expert

Level of Standard Deviation

Average scores 4.50 -5.00 means very satisfied

Average scores 3.50 -4.49 means satisfied

Average scores 3.00 -3.49 means neutral

III. RESULT

The result have 3 Table from sample

Table 2 The evaluation scores on Visual and audio of the media

Visual and audio evaluation	Average score	S.D.	Satisfactory level
The graphics are interesting.	3.85	0.53	Satisfactory
The use of graphics is proper	4.11	0.51	Satisfactory
The sequence of graphics is proper.	3.93	0.62	Satisfactory
The sequence of graphics is interesting.	3.81	0.62	Satisfactory
The audio is proper.	3.70	0.67	Satisfactory
The narrated voice is smooth, convincing and proper.	3.93	0.62	Satisfactory
The narrated voice is clear and correct.	4.19	0.68	Satisfactory
The creative media are proper.	4.00	0.68	Satisfactory
The use of color tones is proper.	3.96	0.65	Satisfactory

The timing of media is proper.	3.33	0.62	Neutral
The average score	3.88	0.62	Satisfactory

According to the table, The items on the narrated voice is clear and correct have the highest quality the average score of 4.019 with standard deviation of 0.68 and the less score on item the timing of media have proper because have used many time for video presentation.

In summary, The evaluation scores on Visual and audio of the media received good result of evaluation with the average score of 3.88 with standard deviation of 0.62

Table 3 The evaluation scores on content of the media

Content evaluation	Average score	S.D.	Satisfactory level
The content is easy to understand.	4.26	0.71	Satisfactory
to give the target audience the knowledge of how to use each part of different acne correctly.	4.00	0.73	Satisfactory
The media presentation style using motion graphic for learning is interesting	3.89	0.58	Satisfactory
To provide better access of information to understand how to use herbs properly with right quantity.	3.96	0.59	Satisfactory
To promote self-reliant treatment with the use of Acne especially in initial stages of sickness.	3.81	0.62	Satisfactory
The sequence of content is proper and easy to understand	4.04	0.52	Satisfactory
The language use of content is proper.	4.04	0.52	Satisfactory
The average score	4.00	0.61	Satisfactory

According to the table, two evaluation items on the sequence of content have proper and easy to understand and The language use of content have proper have the highest quality which both gained the average score of 4.04 with standard deviation of 0.52

while the item on the To promote self-reliant treatment with the use of Acne especially in initial stages of sickness less score of 3.81 (S.D.0.62) In summary, content of the media received good result of evaluation with the average score of 4.00 with standard deviation of 0.61

Table 4 The evaluation scores on the overall creative media design

Overall media design evaluation	Average score	S.D.	Satisfactory level
The overall picture of creative media promotes lifelong learning. How much does it help	4.19	0.56	Satisfactory
The overall picture of how creative media is perceived to be very appropriate.	4.15	0.73	Satisfactory
The average score	4.17	0.55	Satisfactory

The study found that 2 evaluation items have evaluation score 4.19 and 4.15 its close value, The overall picture of creative media promotes lifelong learning. How much does it help have highest score 4.19

The result from 3 expert

Table 5 The evaluation scores on narrated voice

Narrated voice evaluation	Average score	S. D .	Satisfactory level
The narrated voice is proper.	3.25	0.96	Satisfactory
The emotion of the voice is proper.	2.75	0.96	Satisfactory
The rhythm of the voice is proper.	3.25	0.96	Satisfactory
The narrated voice is clear.	3.25	0.96	Satisfactory
The average score	3.12	0.00	Satisfactory

The study found that 3 evaluation items have evaluation score 4.19 and 4.15 its close value, The overall picture of creative media promotes lifelong learning. How much does it help have highest score 4.19

CONCLUSION

It can be concluded from the results of the evaluation of the sample group on the research: Interactive Multimedia base Mobile learning for Health : The Creative Media "Acne is a health indicator", participants think the media is the visual and audio in satisfactory and the content score is 4.00 (Satisfied level) . In summary, the average score of overall content is 4.17 score (Satisfied level) as the media helps make viewers understand the information easily. makes the media interesting and gives information of media the research was design MOOC instruction by use video motion with in 5 minute each module on mobile learning. In the near future, the Chat bot will be introduced to facilitate the students in answering questions and examining answers for supporting the sustainable learning.

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