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THE DEVELOPMENT OF TABLET BASED LEARNING MODEL WITH GAGNE'S NINE EVENTS OF INSTRUCTION

Abstract:

The purpose of this study were 1) to create and find out efficiency of Tablet based learning model with Gagne's nine events of instruction entitled Internet for Education 2) to study the learning achievement of students after learning by using Tablet based learning model with Gagne's nine events of instruction entitled Internet for Education. The samples in this study were 37 students in Bachelor of Education Program, Faculty of Education, Naresuan University, in the academic year 2014. The instruments of this study were 1) Tablet based learning entitled Internet for Education 2) The achievement test.

The results of this study revealed as the followings; 1)The efficiency of Tablet based learning model with Gagne's nine events of instruction entitled Internet for Education was 88.20/87.57 which reached the set criteria 80/80 2) the comparison of the students' learning achievement, post-test was higher than pre-test with a significant level .05

Keywords:

TABLET BASED LEARNING, GAGNE'S NINE EVENTS OF INSTRUCTION

JEL Classification: I20

1. The importance and statement of problem

According to the policy and strategic plan toward the goals and action plans during 2009 – 2013, the 2nd strategic plan is the development of Naresuan University which has the system and process for producing the quality graduates who are in high demand of the leading national employers and organizations. To develop of the basic factors needed to produce quality graduates, to establish the corporate culture to Knowledge based society with a strong desire to learn, to use the system of self-access learning resources through electronic media by implementing the teaching in e – Learning. (Sujin, 2014)

Tablet based learning is the instruction media that can be presented in the form of M-Learning. It is convenient to study anywhere and anytime. It can be used in the course as you need such as teaching, training, and can be also used the main instruction media or supplemented in class. Nowadays, many institutions were found that lack of using educational theory together with Tablet PC, namely process, form, and method of teaching. However, these educational theories still need to use forever, technology has changed though. (Passakorn, 2013)

Instruction media on the Tablet PC can be used in learning activities any time. It can be presented as text, images, video, including social media that can be applied in various learning activities.

Regarding learning, instructors need to gain attention for students because they will begin to learn and concentrate. The instructors should identify the purpose after learning that the students would have more experience, link to the old and new experience and knowledge, use the instruction media to build the interaction between the students and the media along with the assessment of learning. So, Learning will get the achievement as expected. (Tissana, 2002)

Gagne's nine events of instruction have briefly steps as follows; (Gagne', Robert M. & Briggs, Leslie J. 1979).

1. Gaining Attention: It is intended to raise the students in learning.
2. Informing the learner of the objective: It makes the students know and learn.
3. Stimulating recall of prerequisite learning: To encourage students to apply the exist knowledge with new knowledge.
4. Presenting the stimulus material: It makes the students to show own performace.
5. Providing "learning guidance": Teachers may use questions to help and guide the students. Students will have the concepts and rules on the subject.
6. Eliciting the performance: Teachers may allow students to show their ability.
7. Providing feeding: It is the step that allows the students to be aware of the consequences of their action.
8. Assessing the performance: It is a result of learning. Each student is willing to learn and have a better idea.
9. Enhancing retention and transfer: It is the step that the students use exist knowledge to link the new knowledge such as doing exercise and review the lessons.

Gagne's nine events of instruction as above, these can gain attention to the students. Students will be able to know the purpose, stimulate learning that has existed, and get the stimulus material. The instructors must use the question, guide the learners for eliciting the performance, evaluate, enhance retention, and link to the new knowledge.

As Gagne's nine events of instruction, I would apply to the Tablet based learning model which synthesized the media and communication activities and analyzed the related activities to be use with Gagne's nine events of instruction from now on.

Naresuan University, (2012) provides the course of Bachelor of Education Program and provides teaching entitled Internet for education which is the elective course for undergraduates. According to teaching before now, (Passakorn, 2008) It was found that there were differences between individual students. The students who had experience to use computer previously would study faster than students who had less experience to use computer. And students with less computer experience would have less interest in learning also, as a result, get lower grade than it should be.

In order to the policy and strategic plan, resolving the differences between the students, and applying the teaching theory of Gagne's nine events of instruction together with Tablet PC, so the researcher proposed this research "The development of Tablet based learning model with Gagne's nine events of instruction"

2. Purpose of the study

The purpose of this study were to

- 1) Create and find out efficiency of Tablet based learning model with Gagne's nine events of instruction
- 2) study the learning achievement of students after learning by using Tablet based learning model with Gagne's nine events of instruction
- 3) study the attitude of the students after learning with Tablet based learning model with Gagne's nine events of instruction

3. The relevant literature (Tablet Based Learning)

3.1 M-Learning

Mobile refers to the electronic device with the operating system. It can be installed the program called Application for using as telephone, audio-visual communication, printing, presentation, computing, etc. It can be connected to the internet network for using application. (Passakorn, 2013)

Learning refers to changing of behavior after learning from media and activity and needs to reach the set criteria of evaluation.

Most people call Mobile Learning as M-Learning.

M-Learning refers to applying Application on Mobile with wireless network for learning activity as learning objectives including assessment and passing the set criteria. (Passakorn, 2013)

1.2 Tablet Based Learning

Tablet PC refers to the electronic device with the operating system that manages the internal

and external device to collaborate. It can be installed Application for operating as objective of program.

Tablet Based Learning is the application that represents the media for presenting lessons, learning activities and assessments as the learning objectives (Passakorn, 2013) that be mentioned the good point and the weak point of the Tablet PC as following;

The good point of Tablet PC

1. There is small and easy to carry in a different place.
2. There are various sizes to choose from small size called Smartphone sized 340x480 and large size of a Tablet PC with 7 inches, 8 inches, 8.9 inches, and 10 inches until 11 inches.
3. To communicate with the wireless both Wi-Fi and cellular 3G.
4. To connect external devices very well such as SD Memory Display Adapter USB Diskdrive headset, etc.
5. Now Tablet PC is cheap and good quality and manufactured by an independent company. (China and other countries).
6. There are many brands of Tablet PC.
7. There is the quality system. The current system is widely used, namely IOS and Android system. Moreover, both are effective.
8. The new generation of Tablet PC has energy-saving. You can use a battery many hours.
9. Tablet PC is without the keyboard and suitable for elementary students who cannot use the keyboard.

The weak point of Tablet PC

1. There is small size that affects to have the limit area. You need to present by a brief content and small font and image.
2. Because of various sizes, you must choose to use flexible technology such as JQuery mobile, html5, etc. This media is suitable for Tablet PC with 7 inches and can show in vertical.
3. To communicate by wireless with Wi-Fi and 3G cellular. If the signal is not covered, it cannot present through MWBI. On the other hand, MCAI can be presented.
4. You must be considered in Application to be developed and installed.
5. There is the limit of battery. So, you need to use battery save.

Instruction media and activity on Tablet based Learning

Internet technology is comfortable and excellent to present. It also make the activities of

communication (Passakorn, 2011) that be mentioned as following;

1. Presentation Media

Web Text focuses on texts. It is fast to present and download data. It is suitable for presenting the lesson plan, objectives, contents and assessment.

Web Graphics focuses on graphic or image. It is slow to present and download data. It is suitable for presenting the content that need to be explained and illustrated clearly such as surgery process, swimming method, etc.

Flash Animation focuses on graphic animations. It is slow to present and download data. It is suitable for presenting the content that need to be explained and illustrated clearly such as surgery process, swimming method as same as Web Graphics.

Streaming Video focuses on movies or animation as same as Flash Animation and Web Graphic.

2. The Media

Chat is the activity that can talk each other. It is two-way communication and suitable for instructors and students are synchronous. We can have appointment to chat any time for consultation, answering and explaining to the students.

Video Conference / Web Cam is the activity as same as Chat. Moreover, it is conversation that can see each other as well. It is suitable for instructors and students are synchronous. We can have appointment to chat any time for consultation, answering and explaining to the students.

Mail is the communication activity that learners and teachers can send documents to each other without synchronous time (Asynchronous). In addition, teachers can also send messages to the students. When the students have free time, they can open, read and respond immediately. It is suitable for answering and asking in the lesson, informing news and submitting homework by attachment.

Webboard is the communication activity that teachers and students can connect to each other by the message on the forums or Webboard. Instructors can post the comment to be homework. without synchronous time (Asynchronous) as same as Mail.

Online Testing is the communication activity that the students do the quiz. Then, WBI database system will store the information. The students can check and evaluate own achievement. Online Testing is an essential communication system in Online Testing.

Regarding Instruction media and activity as above, it will apply with Tablet based learning model with Gagne's nine events of instruction effectively and can enhance the achievement learning, support learning and teaching as well.

3.4 Gagne's nine events of instruction

including 9 steps; (Gagne', Robert M. & Briggs, Leslie J. , 1979).

1. Gaining Attention: It is intended to raise the students in learning.
2. Informing the learner of the objective: It makes the students know and learn.
3. Stimulating recall of prerequisite learning: To encourage students to apply the exist knowledge with new knowledge.
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5. Providing "learning guidance": Teachers may use questions to help and guide the students. Students will have the concepts and rules on the subject.
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8. Assessing the performance: It is a result of learning. Each student is willing to learn and have a better idea.
9. Enhancing retention and transfer: It is the step that the students use exist knowledge to link the new knowledge such as doing exercise and review the lessons.

Regarding Gagne's nine events of instruction, It was applied with e-Book on Tablet PC

by synthesizing and collecting the media and communication activities and analyzing media and related activities.

4. Methodology

4.1 Samples

The population is divided into the expert of instruction media, the expert of teaching, the expert of content, and 3rd year students in Bachelor of Education Program.

The samples in this study are divided into;

3 experts of instruction media

3 experts of teaching

3 experts of content

37 students in Bachelor of Education Program, Faculty of Education, Naresuan University, in the academic year 2014 who study in the Internet for education course.

4.2 Scope of Research

Scope of content

1. Elementary Data Communication
2. Elementary Internet
3. Application of Internet

Scope of model with Gagne's nine events of instruction

1. Gaining Attention
2. Informing the learner of the objective
3. Stimulating recall of prerequisite learning
4. Presenting the stimulus material
5. Providing "learning guidance"
6. Eliciting the performance
7. Providing feeding
8. Assessing the performance
9. Enhancing retention and transfer

4.3 Research instruments

The instruments of this study were:

1. Tablet based learning entitled Internet for Education
2. The achievement test.

The researcher used ADDIE Theory to develop including 5 steps: (Wikipedia, 2014)

- 1) Analysis
- 2) Design
- 3) Development
- 4) Implementation
- 5) Evaluation

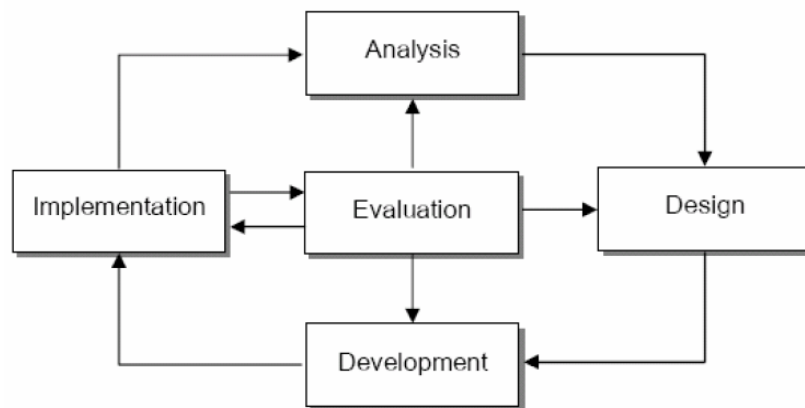


Fig. 1 The process of development of a computer-based approach of the ADDIE Model.

1) Analysis

1.1 Objective Analysis: The researcher studied contents and objective in the course of Educational Technology and Communication, Bachelor of Education Program, Faculty of Education.

1.2 Audience Analysis: Students are undergraduates who study in Educational Technology and Communication, Bachelor of Education Program, Faculty of Education, Naresuan University and have skills of using computer program basically.

1.3 Technology Analysis: The researcher studied model of Tablet Based Learning that used Adobe Captivate Technology, including

1. Presentation Media is the lesson that present by text, image, video, voice, and graphic to explain contents.

2. Interactivity is the interaction between student and lesson. The researchers developed the program for students to do the test and see the results.

3. Course Support is the service on the Internet (Social Media) to support teaching and learning. The researcher use Social Media to communicate with students.

1.4 Content Analysis: By using objectives of the lesson to guide and collect content that corresponds to needs. The experts of teaching were the analyst or examiner before creating Tablet Based Learning.

1.5 Activity Analysis: The researcher studied Gagne's nine events of instruction including 9 steps;

1. Gaining Attention: It is intended to raise the students in learning.
2. Informing the learner of the objective: It makes the students know and learn.

3. Stimulating recall of prerequisite learning: To encourage students to apply the exist knowledge with new knowledge.

4. Presenting the stimulus material: It makes the students to show own performance.

5. Providing "learning guidance": Teachers may use questions to help and guide the students. Students will have the concepts and rules on the subject.

6. Eliciting the performance: Teachers may allow students to show their ability.

7. Providing feeding: It is the step that allows the students to be aware of the consequences of their action.

8. Assessing the performance: It is a result of learning. Each student is willing to learn and have a better idea.

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Regarding Gagne's nine events of instruction, It was applied with e-Book on Tablet PC

by synthesizing and collecting the media and communication activities and analyzing media and related activities.

1.6 Media Analysis: The researcher considered to choose media on Tablet PC by

using the questionnaire about instruction media with Tablet based learning model with Gagne's nine events of instruction Design for deciding to choose the best media.

2) Design

2.1) Tablet based learning model with Gagne's nine events of instruction Design

1. Gaining Attention: It is intended to raise the students in learning.

2. Informing the learner of the objective: It makes the students know and learn.

3. Stimulating recall of prerequisite learning: To encourage students to apply the exist knowledge with new knowledge.

4. Presenting the stimulus material: It makes the students to show own performace.

5. Providing "learning guidance": Teachers may use questions to help and guide the students. Students will have the concepts and rules on the subject.

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9. Enhancing retention and transfer: It is the step that the students use exist

knowledge to link the new knowledge such as doing exercise and review the lessons.

2.2) Screen Design

The researcher collocated the area of the screen on Tablet PC which has the limit to design text, images, and buttons to be balanced. The screen is important to gain attention and help the students to follow the lessons. It makes the students enjoy and can study without any obstacles. The researcher or expert must have knowledge of Arts and understanding on the ability of the visual display of the computer.

3) Development

3.1) Preparation: The researcher prepared materials such as images, text and

audio from various sources or computer programs created, then saved to develop further.

3.2) Develop the Lesson: After preparing the text, images, audio, and computer

programs used in the lessons, the researcher created Tablet Based Learning as storyboard until all frames completely by software. After that, Tablet Based Learning would be linked between the contents of each frame as the flowchart designed in the first step. At this step, all materials prepared at the first step would be used to create Tablet Based Learning, including exercise, test, and score evaluation.

3.3) Documentation: By providing the handbook or manual to guide the students

know the recommendations and lesson plan (Learning Map).

3.4) After Tablet Based Learning was developed already, It will be used to

evaluate the quality from the experts to adjust further. The quality assessment was divided into three aspects: content, design, and instruction media and facilities.

4) Implementation

When Tablet based learning model with Gagne's nine events of instruction was complete, next the researcher would take it to try out with target group. They were a small group total 6-10 people. Then, the researcher must adjust and improve better.

5) Evaluation

The researcher took Tablet based learning to try out (Field test) with sample group to evaluate and find out the efficiency (E1 / E2) which compare the average scores of students to do the exercises during the lesson and the average score of the test after learning, along with evaluating the achievement learning of the students after learning with Tablet based learning model with Gagne's nine events of instruction.

5. Conclusion

1. The development of Tablet based learning model with Gagne's nine events of instruction entitled Internet for Education was the development and application together with Gagne's nine events of instruction. The learners have studied from Tablet based learning and activities that focus on the psychology and development of the learners.

The result of the efficiency of Tablet based learning model with Gagne's nine events of instruction entitled Internet for Education was 88.20/87.57 which reached the set criteria 80/80.

2. The results of the comparison of the students' learning achievement before and after learning with Tablet based learning model with Gagne's nine events of instruction, post-test was higher than pre-test with a significant level .05
3. The results of students' attitude towards Tablet based learning model with Gagne's nine events of instruction was at high level $\bar{x}_2 = 4.80$, including knowledge, teaching process of Gagne's nine events of instruction, Media, and facilities.

6. Discussion

1. Results of the efficiency of Tablet based learning model with Gagne's nine events of instruction entitled Internet for Education reached the set criteria 80/80 because of the process of development since studying the documents and related research, problem analysis, learners analysis, Content analysis, design of lessons and learning process to create Tablet based learning.
2. The results of the comparison of the students' learning achievement before and after learning with Tablet based learning model with Gagne's nine events of instruction, post-test was higher than pre-test with a significant level .05 because Tablet based learning model with Gagne's nine events of instruction seem to be applied as steps of Gagne, including Gaining Attention, Informing the learner of the objective, Stimulating recall of prerequisite learning, Presenting the stimulus material, Providing "learning guidance", Eliciting the Performance, Providing feeding, Assessing the performance, and Enhancing retention and transfer. Moreover, Tablet based learning helped to stimulate students' interest well and made students' achievement was higher than before learning and attitude of the students after learning was at a high level.

In summary, Tablet based learning model with Gagne's nine events of instruction is effective and appropriate to the learners. It can be used as the instruction media, reduce the differences of learners, reduce limit of time and class, and respond the learning needs effectively.

7. Recommendation

1. We must be ready to Use Tablet Based Learning and Internet network. So, the instructor should prepare needed equipment.
2. Let the learners join in the activities by commenting through web board and social media for stimulating the exchange of learning more.
3. We should take Tablet Based Learning to develop content for students in other class. It makes the learning more useful further.
4. We can take the other methods and models of instruction to use with Tablet Based Learning for achieving more effective learning.

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