The effectiveness of e-Learning pedagogy open online courseware

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Thailand Cyber University Project (TCU) followed one of its missions by gathering faculty from different universities to jointly experiment online learning in Learning Management System.

TCU provide e-Learning Professional Program with faculty from 10 universities participating in creating the program, selecting appropriate technology, developing guidelines for online teaching, creating courseware, providing teaching, and evaluation.
The research on Thailand higher education reform, especially the development of learning process in higher education institutes

Develop Instructors of teaching process on e-learning for create learning and plan, analyze the learners’ need, design and develop learning participate in learning activities, develop contents for learner and evaluate the learners’ learning.
Pedagogy is
- The method and practice of teaching, especially as an academic subject or theoretical concept
- Function or work of a teacher; teaching.
- Instructional methods.

based on teaching methods in the classroom

e-Learning pedagogy focus is on e-teaching which is the teaching method on internet to transfer contents of the knowledge and experiences to students
pedagogy

Focusing on teaching

Teacher and Leaders Learning together

Conversations For change
This research focus to develop courseware e-Learning to provide contents teaching methods especially pedagogical techniques supported in teaching the e-Learning classroom for teacher and instructors in educational institution to do learning activities and to create knowledge asset from experiences of implementing e-Learning courseware.
1. to develop open online courseware on e-Learning pedagogy course for instructors in educational institution.

2. to evaluation learning achievement by using online courseware on e-Learning pedagogy course.

3. to evaluation online courseware on e-Learning pedagogy.
Research Method:

The research population consisted of 300 second-year graduate students in the faculty of education, Silpakorn university in the second semester of the academic year 2011. A sampling group was 33 graduate students who enrolled in computer Assisted Instruction course by simple random sampling.

Research processes are as following 3 steps
Step 1

Study contents, concepts, theories, and practices to design online courseware.

The study included the study of theories and research on the design of online teaching materials and teaching techniques and methods to be used as guidelines in determining contents and learning activities.
Step 1

Brainstorming meetings of e-Learning experts from educational institutions in Thailand and focus group discussion were organized to collect ideas and suggestions.
Discussion issues were analyzed and used to design contents, learning activities, and achievement tests.
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Step 2

**Design and Development of online courseware**

- The courseware production started with reviewing related documents and research and determining teaching methods and objectives and opinions and suggestions from the brainstorming meetings of e-Learning experts.

- Contents were produced by multimedia software and Moodle LMS (Learning Management System). Each course consisted of pre-test and post-test, content module, exercise, communication channels, including webboard, chatroom, videoconference and created screen design of coursewares.
Step 2
Screen Design of online e-Pedagogy coursewares

URL
http://www.thaicyberu.go.th
Step 2
Screen Design of online e-Pedagogy coursewares
Step 2
Screen Design of online e-Pedagogy coursewares

SU-eTeaching01 :: ความรู้พื้นฐานในการเรียนการสอนออนไลน์

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- แบบทดสอบก่อนเรียน
- หลักการทำงานและขั้นตอนในการเรียนการสอนออนไลน์
  - ระบบการสอน
  - การจัดการแบบระบบขั้นการเรียนรู้ออนไลน์
  - นวัตกรรมเรียนแบบใหม่
  - นวัตกรรมเรียนแบบ Web 2.0
  - ประโยชน์และการวิจัยasics นวัตกรรมแบบเรียนออนไลน์ web 2.0
- ตัวอย่างการใช้เครื่องมือกับ 6 วิธีการสอน
- รวบรวมแนวคิดการสอนและแผนการเรียน

- กิจกรรมการเรียนการสอน
- กิจกรรมที่ให้นักเรียนพบกับกิจกรรมในที่เรียนและผู้เรียนกับผู้สอน
- การสอนแบบและการใช้เครื่องมือดิจิตอลเพื่อที่เหมาะสมในการเรียนการสอน
- เข้าถึงแนวคิดการเรียนรู้
- PowerPoint ประกอบการเรียนรู้
- แบบทดสอบหลังเรียน

- ที่ระบายอากาศ ที่ตั้งสถานมา
- กลุ่มงานย่อย (Collaborative Group)
Step 3

Evaluation online courseware on e-Learning pedagogy course.
- Evaluated of courseware by 3 content experts and 3 e-Learning experts by using 5 rating scale assessment.
- Compare learning achievement pre-test and post-test studying online courseware on e-Learning pedagogy course
- Study of students opinion study online courseware
1. The online courseware on e-Learning pedagogy course included the 7 courseware contents:

1) Fundamental of Online Instruction
2) e-Pedagogy Lecture Learning
3) Discussion-based Learning
4) Problem-based Learning
5) Project-based Learning
6) Games and Simulation Learning
7) Case-based Learning
The features of each courseware were:
1) fully online course, 2) self-paced learning course, 3) non-linear course, 4) 6-9 study-hour course.

Contents of each course consisted of
1) objectives, 2) theories and applications in online teaching, 3) learning activities, 4) interactive activities between students and contents, between students and instructors, 5) suggestion of appropriate internet tools, 6) suggestion on how to evaluate learning achievement.
The quality evaluation of the courseware by e-Learning experts was good

(mean = 4.35, S.D = 0.34)

Table shows average score of courseware quality evaluation by e-Learning experts

<table>
<thead>
<tr>
<th>Evaluation Topics</th>
<th>$\bar{X}$</th>
<th>S.D</th>
<th>Score Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Content</td>
<td>4.27</td>
<td>0.46</td>
<td>Good</td>
</tr>
<tr>
<td>2. Design</td>
<td>4.30</td>
<td>0.24</td>
<td>Good</td>
</tr>
<tr>
<td>3. Usability</td>
<td>4.50</td>
<td>0.29</td>
<td>Excellent</td>
</tr>
</tbody>
</table>

Average Scores

$\bar{X}$ = 4.35, S.D = 0.34
Good
2. Learning achievement result from post-test of online courseware on e-Learning pedagogy course was higher than pre-test. t-test showed statistically significant difference at 0.05. It could be explained that students gained learning achievement from the online course.
Findings

Descriptive data compares the score of 33 students’ learning achievement pre-test and post-test

<table>
<thead>
<tr>
<th>Test</th>
<th>N</th>
<th>Full Score</th>
<th>$\bar{X}$</th>
<th>S.D</th>
<th>t</th>
<th>Sig.(2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>33</td>
<td>30</td>
<td>16.06</td>
<td>3.44</td>
<td>-7.873</td>
<td>.000*</td>
</tr>
<tr>
<td>Post-test</td>
<td>33</td>
<td>30</td>
<td>21.75</td>
<td>4.47</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05
3. The students’ opinions on online courseware on e-Learning pedagogy course was conducted with the sample group of 33 students answering 5 rating scale questionnaire. The students opinions application has good level positive toward the online e-Learning pedagogy course (mean = 4.10, SD = .38)
The students' opinions application has a good level.

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<th>$\bar{X}$</th>
<th>S.D</th>
<th>Score Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Content</td>
<td>4.15</td>
<td>.34</td>
<td>Good</td>
</tr>
<tr>
<td>5. Design</td>
<td>3.99</td>
<td>.48</td>
<td>Good</td>
</tr>
<tr>
<td>6. Usability</td>
<td>4.03</td>
<td>.47</td>
<td>Good</td>
</tr>
<tr>
<td>Average Scores</td>
<td>4.06</td>
<td>.38</td>
<td>Good</td>
</tr>
</tbody>
</table>
1. The results of this study were the 7 courseware contents and 6 features of each courseware designing process was suggested and monitored by experts at all stages.

It could be explained

Research is done by analyzing the documents, collecting qualitative data, and brainstorming meetings. Qualitative data collecting methods that were widely used included brainstorming meetings of e-Learning experts which the was conducted in this research.
2. The study of learning achievement result from post-test of online courseware on e-Learning pedagogy course was higher than pre-test. t-test showed statistically significant difference at 0.05. It could be explained:
- Students gained learning achievement from the online courseware.
- Courseware was developed under the systematically design process and efficiency evaluation to improve in every step of production.
Activities in online courseware enabled students to be an active learner, which is different from a regular classroom lecture which makes students to become a passive learner.

The courseware should be designed to be easily navigated, convenient to go back and forth and should enable students to study by themselves.
3. The students’ opinions on studying online courseware on e-Learning pedagogy course was good level (mean = 4.06, SD = .38).

Can be explained that the courseware was

- Something new that the students have never seen before.

- Every element in the courseware such as contents was well-designed.

- Objectives of each course were clear and consistent with the contents.

- The contents were clear, concise, easy to understand, and were organized into order
Thank You for your attention

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