



Guidelines for Improvement of Learning Management Process With Technology Integration Using iPad

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Abstract

This research aims 1) to explore learners and instructors' opinions on the problems or obstacles towards learning management process with technology integration using iPad and 2) to study the guidelines to improve the learning management process with technology integration using the iPad in the Academic Collaboration Program between the Department of Local Administration and Suan Dusit University Phase 2 (Ror Mor Por 2). A survey questionnaire was distributed with quota sampling method to 574 students from 6 educational centers under Ror Mor Por 2 project: Suan Dusit University, Lampang Center, Chiang Rai Rajabhat University, Suan Dusit University, Trang Center, Songkhla Rajabhat University, Uttaradit Rajabhat University and Maha Sarakham Rajabhat University. An interview was conducted to 30 instructors from the same 6 educational centers under Ror Mor Por 2 project. The results indicate that the problems and obstacles from learners' opinions towards learning management process with technology integration using iPad have problems/obstacles at a low level with the highest average of the problem in an aspect of technology facilities. It was suggested that the improvement guidelines should have the staff to take care of the device connected to the Internet before the teaching and learning and should have more WIFI signal boxes inside learning areas. From the instructors' interviews, it was found that the instructors' understanding regarding the principles of learning management with technology integration in three learning patterns, the collaborative planning among instructors for learning activities, including giving assignments had not been cleared and inconsistent approach. With these problems, most of the instructors suggested that there should have been a meeting of all instructors in order to make the overall plans together resulting in an apparent and consistent approach. In addition, the technology training program should be provided to all instructors so that they are able to use the iPad as well as technology facilities effectively. Another problem was the effectiveness of WIFI signal that is very important for teaching and learning because iPad need to be connected to the Internet via WIFI network but the WIFI signal was sometimes unstable and low. The improvement guideline for this problem is to develop a WIFI system to make it easier for the Internet connection that can support teaching and learning process effectively.

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Guidelines for Improvement of Learning Management Process
With Technology Integration Using iPad

Introduction

Suan Dusit University has set up a co-operation project to develop educational human resources for local administrations using effective learning management to prepare the learners for the 21st-century skills. The most important of 21st-century skills is the learning skills resulting in a change of learning management process in order that 21st-century learners can have the knowledge, abilities, and skills to effective use in the future. With advanced technologies, the current environment is surrounded by the infusion of technology. In terms of education, many schools and universities are using technology in a wide variety of ways in classrooms to enhance the effectiveness of teaching and learning. Suan Dusit University is aware of the importance of technology integration as a powerful way to develop teaching and learning seriously and continuously under the concept of three patterns of learning management as follows:

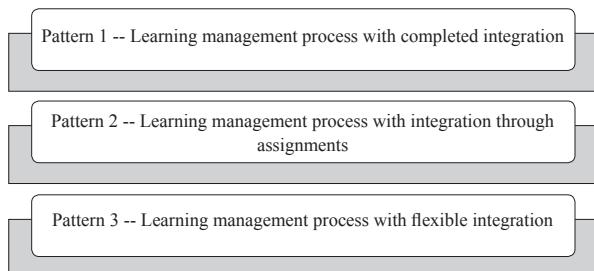


Figure 1 Learning Management Process Pattern

Pattern 1 Learning management process with completed integration is to arrange the learning activities with the integration of all courses that focus on learners' self-learning to create the new knowledge on their own ways. It is the learning process that is helpful and consistent with the real experience at the Child Development Center that provides an integrated learning experience for children in order to reduce some overlapping assignments and class duration. With this learning pattern, the students are able to learn more about new technologies and innovations.

Pattern 2 Learning management process with integration through assignments is the learning management process, which is divided into individual courses. The learning integration takes place the collaboration of whole subjects that all teachers will work together to design the assignment or project for students with the same concepts or ideas to reach the mutual objectives. The designed project helps students to create new knowledge

by themselves and have the opportunities to use new knowledge from the classrooms to develop their projects while working at the Child Development Center.

Pattern 3 Learning management process with flexible integration is to arrange the learning management process for each course separately and all instructors will continuously conduct the classes to complete their own course. The integration takes place through the use of experience-based activities that focus on skills and integration of related subjects. Most of the activities are off-site activities, giving students the opportunity to learn from learning in a variety of resources.

For the 21st century education led by the Faculty of Education which has used the iPad as a teaching tool under the Academic Cooperation Project between the Department of Local Administration and Suan Dusit University in Phase 2 (Ror Mor Por 2) to increase in efficiency and effectiveness of the organization in teaching and learning. It is regarded as true integration of learning to work in providing a variety of learning activities, using information technology, including the iPad in teaching and learning management as well as using the prominent point of the technology to combine with normal teaching and learning management that makes it different from other courses. The challenge of this kind of learning is that instructors and learners have encountered problems or obstacles by using technology in arranging such teaching and learning and both of them can find solutions for such problems in order to develop knowledge, skills, and experiences from using iPad during classroom to extensively apply and contextual implement for developing their own potential in other areas. The comments of the learners and the use of iPad in this integrated pattern of learning can be the beginning for driving education with technology for sustainable education to be a guideline for improving the teaching and learning process with technology integration in the future.

Objectives

1. To explore the opinions of the learners and instructors on the problems or obstacles towards the Learning Management Process with Technology Integration by using an iPad from the Ror Mor Por 2 project.

2. To study the guidelines for the Improvement of the Learning Management Process with Technology Integration by using an iPad from the Ror Mor Por 2 project from problems or obstacles.

Conceptual Framework

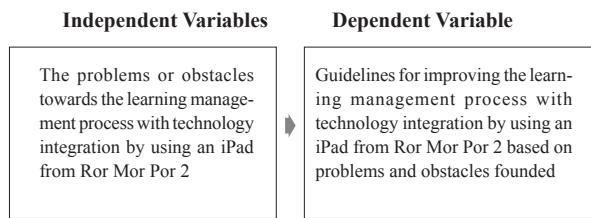


Figure 2 Conceptual Framework

Research Methodology

1. Population and Samples

The population in this research are the learners who are studying a bachelor's degree in Education, majoring in Early Childhood Education from 6 Educational centers under the Ror Mor Por 2 project, including Lampang, Chiangrai, Uttaradit, Mahasarakham, Trang and Songkhla for 995 students. The sample of learners was collected from the number of population for 574 students by using the quota sampling method. The educational centers used in this study were representatives from all centers and they were conditionally selected based on 3 patterns of learning management process as follows:

Pattern 1 –Learning management process with completed integration, the selected universities include Lampang and Chiangrai educational centers.

Pattern 2 - Learning management process with integration through assignments, the selected universities include Uttaradit and Mahasarakham educational centers.

Pattern 3 - Learning management process with flexible integration, the selected universities include Songkhla and Trang educational centers.

2. Research Instrument

This research was quantitative research. The instrument used in this research was a mixed method using the questionnaires as the quantitative method and open-ended questionnaires and interviews as the qualitative method. The instrument contents were as follows:

1) Quantitative method The instruments used to collect data was the questionnaire for the learners'opinions on the learning process management of technology integration by using the iPad. It was divided into 2 parts.

- The first part of the questionnaire surveyed personal information of learners in terms of age, gender, teaching experience taught in the Child Development Center and email address

- The second part of the questionnaire was divided into 6 aspects: 1) Curriculum 2) Learning activities 3) Technology usage of learners 4) Technology facilities 5) Measurement and evaluation 6) Supervising /Monitoring of learning management process to survey the learners' opinions on the problems/ obstacles in the learning management process with technology integration by using the iPad.

2) Qualitative method The instrument used to collect the data was an open-ended questionnaire for the instructors about the problems/obstacles, guidelines for improvement or suggestions in each aspect of the learning management process with technology integration by using iPad as following aspects: 1) Teaching plan 2) Learning activities 3) Measurement and evaluation 4) Supervising and monitoring

3. Data Collection

1) Reviewing data The researchers studied and collected information from both personal and other sources such as books, research papers related to Ror Mor Por 2 project.

2) Field data collection The researcher collected data using the questionnaire and interview to explore the problems/obstacles, the guideline for improvement or suggestions.

4. Data Analysis

1) Quantitative data, the quantitative data were obtained from the learners'opinion questionnaire on problem-solving/ obstacle towards the learning management process with technology integration by using the iPad in Ror Mor Por Project 2 that were analyzed by using the Likert Scale. The results were divided into 5 levels, using the mean and standard deviation.

2) Qualitative data, the researchers had content analysis from the interview without statistic reference. The content analysis was obtained from the documents and the data that the researcher acquired such as interpretations, conclusions, classification and comparison to find answers under the framework and the theories to get a reliable and accurate data.

Results

The results of this research were divided into 3 parts according to the research purposes as follows:

Part 1 Problems/obstacles collected from the opinions' learners towards learning management process with technology integration by using an iPad

Part 2 Problems/obstacles collected from

instructors' interview towards the learning management process with technology integration by using an iPad

Part 3: Solutions used to develop learning management process with technology integration by using an iPad

Part 1 Problems/obstacles collected from the opinions' learners towards learning management process with technology integration by using an iPad

According to the learners' opinions on the level of problems / obstacles towards learning management process with technology integration by using an iPad of the learners in the Faculty of Education, majoring in Early Childhood Education Program, Suan Dusit University from 6 educational centers under Ror Mor Por 2 project, the researchers found that the overall level of problems/obstacles was at a low level with a mean score of 2.10 out of 5.00. According to each 6 aspect, the highest mean score of 2.25 was technology facilities and followed by the supervising and monitoring of learning management process with the mean score of 2.11, measurement and evaluation with the mean score of 2.09, curriculum with the mean score of 2.07, technology usage of learners with the mean score of 2.07 respectively. Lastly, learning activities was found as the lowest mean score of 2.02. The details of each problem/obstacle were as follows.

1) Curriculum

- Most learners still lacked understanding regarding the curriculum and teaching and learning process of Ror Mor Por 2 project. The learners should be more provided with the orientation giving the details about the curriculum, including teaching and learning process.

- Some courses had similar contents and too much theoretical contents. The contents should have been adjusted as a single course.

2) Learning activities

- Some learning activities created for children at Children Development Center were not consistent with the children' daily classroom routines, so the learners who are the actual teachers at Children Development Center cannot adapt those learning activities they learned in the class and use them for the real situation to meet the needs of children.

- Since the curriculum required iPad for learning in the course, the learners had not been constantly trained for using iPad in education. The learners had not been seriously encouraged to use iPad for learning in all

courses and to enhance the skills of learners so that they can implement the iPad for teaching their children at Children Development Center according to Ror Mor Por 2 project's objectives.

- Learning activities are lacking in promoting activities and integrating activities such as extracurricular activities for self-learning outside the classroom.

- Learning activities in the course had not been organized in accordance with the duration of class in each week or throughout the course appropriately.

3) Technology usage of learners

- Some learners could not handle the iPad and found it difficult for using. They should be provided for trainings and the trainings should be divided into different classes according to various functions and applications so that the learners can choose to attend the class according to their interests.

- Personal limitation on the use of iPad such as the cost Internet package, their health problems, especially eyesight problems

4) Technology facilities

- Both instructors and learners sometimes struggle to do the activities because of resource barriers with poor WIFI stability and wireless coverage and problem of non-availability of teaching aids like audio-visual aids.

- No iPad User guide, especially essential apps for specific learning.

5) Measurement and evaluation

- The tests did not have anything to do with what was covered in the class.

- The assessment criteria were quite a high level. It should be adjusted to be aligned with the teaching and learning activities aimed at meeting learning goals as well as the learner's context which not focus only on content knowledge but also on process and capabilities.

- Lack of periodic measurement and evaluation with clarifying and reporting the level of learning outcomes to stimulate the learners for self-monitoring.

6) Supervising / monitoring of learning management process

- The process of supervising / monitoring of learning management process was delayed, especially the report of learning outcomes, including accumulated scores that should be reported to learner in order that they can obtain the guidelines for what to evaluate and how to score for their self-monitoring for study to achieve the goal.

Part 2 Problems/obstacles collected from instructors' interview towards the learning management process with technology integration by using an iPad

1) Teaching plan

The findings of main problems/obstacles as well as solutions were the lack of insights into the lesson plan both integrated TQF3 plan and the individual TQF3 plan. This affected the way in which learning activities were organized and arrangement of activities and instructional media that should meet the learning' objectives. Most instructors agreed that some course contents, including learning activities defined in teaching plan were not aligned with the actual implementation at the Children Development Center. Besides, the instructional media lacked the diversity and could not arouse the learner's attention. The instructors didn't collaborate to plan and create the agreement as well as the guidelines for teaching in case they need to integrate their courses together. Another point was that some instructors did not have enough time to prepare the course contents or activities for teaching because of delayed sending of TQF3. With these problems, the additional suggestions have been stated that the instructors should collaborate in creating a common standard and define all aspects of making TQF 3 together leading to the creating learning activities in the same direction. Also, the instructors should be given the TQF before the first day of university so that the instructor can plan the activities according to teaching plan to create learning agreements and guidelines according to the purposes of teaching plan in each course.

2) Learning Activities

The learning activities were divided into three patterns of integrated learning management process of Ror Mor Por 2 project as following.

2.1) Pattern 1-Learning management process with completed integration

- Instructors and learners lacked knowledge and understanding on the integration of teaching and learning. As a result, the learning activities, teaching methods and giving assignment have not been cleared and did not meet the learning' objectives.

- Learning management process with completed integration is the course that integrated all courses together with the use of technology contributed to the learning activities resulting in the lack of instructors- learners interaction.

2.2) Pattern 2-Learning management process by integration through assignments

- The learning- based assignment using technology affected the implementation of certain learners. There was a limitation about unfavorable technology, such as the Internet system and knowledge as well as understanding of working in use, etc.

- The task assignment approach had not been done in the same direction caused by insufficient clarifying on the principles of giving assignments as planned in the teaching plans.

2.3) Pattern 3-Learning management process with flexible integration

- Some instructors still lacked understanding in teaching and learning-oriented models that focus on innovation, professional learning community (PLC). This problem affected learning activities in terms of content distribution, teaching, and giving an assignment to learners. Therefore, the instructors should be trained about the PLC learning activities.

- Instructors lacked the knowledge and understanding in learning management approaches in the same direction affecting on the practical ways according to the objectives of the learning management process and the integrated teaching plan.

3) Measurement and evaluation

The findings of key Issues/obstacles and the overall solutions lacked participation in all processes of measurement and evaluation aligned with the head office such as standardized benchmarking planning as well as measurement methods. As a result, the instructors lacked understanding of measurement and evaluation. In doing this, there should be a meeting among the instructors to keep the process in line with the same standard and direction according to the context of each area. Besides, it should be measured and evaluated in various ways to improve the evaluation process by reflecting the results in each learning management pattern appropriately.

4) Supervision / Monitoring

The findings and the overall solutions were that the instructor's learning management process lacked the assessment from feedback throughout the process such as activity planning, activity arrangement, technology instructional media, and knowledge transfers. In doing this process, the evaluation of the teaching quality should be observed through the quality of the students 'works. The results of the evaluation should be reported to the instructors for mutual clarification and improvement. The suggestions to the problems as mentioned, there should be the apparent and appropriate criteria and guidelines for evaluating instructors according to the

patterns of learning activities. The instructors should be understood in the same direction as well.

Part 3: Guidelines for the development of learning management processes with technology integration using the iPad 2

The researchers analyzed the problems and obstacles and then synthesized the solutions to improve the learning management process with technology integration using the iPad as follows.

- There should be a collaborative learning plan through the process of creating knowledge, understanding and planning together in details for all courses from all sectors involved. This may include the parents' participation or others related as well as the Early Childhood Development Center to meet the intentions of the curriculum that focuses on parenting and promoting learning so that the learner can learn based on specified pattern of learning management process appropriately.

- The potential of instructor and learners in the use of iPad were different, so it is necessary to provide the specific iPad guide user for instructors and learners to study and work properly, including training on the use of new technology or new application to the instructor continuously and properly.

- To enhance the efficiency of the Internet service system in each center for learning activities and researches by using technologies efficiently.

- Learning management with the use of iPad for instructors, the user should be informed for an enroll code or other necessary information in advance to have enough time for preparing the contents, activities, and instruction media selection efficiently.

Discussion

From the study of problems/obstacles towards the process of technology integration learning management using iPad by discussing on the problems/obstacles together with the guidelines for the development of such issues, these can be divided into 6 areas as follows.

In the aspect of the curriculum, the course contents should be reduced in details. Instead, it should be increased for the examples in practical ways together with the theories for better understanding that can lead to the best practice in teaching and learning as well as the proper course duration.

In the aspect of learning activities, the problems and obstacles were the integration of activities and giving

assignments of all courses. It was identified that learning activity management lacked the encouragement of integration for various activities such as doing research activities in and out of the classroom and organizing the activities in each week. Therefore, each course should be defined activities and instructional media that were aligned to the contents and learning' objectives. In addition, the instructors had the problems of interpretation and implementation about the lesson plans created by the RMP head office. Thus, there should be a common standard through the process of creating knowledge, understanding, and planning together to define every detail in preparing the learning plan for all subjects and all sectors must be involved.

In the aspect of the usage of technology, the most problems and obstacles were the use of a WBSC system or Work-based Blended Learning and Technological Scaffolding System which means student-centered learning management system combines classroom learning together with online learning and work-based learning with a systematic technology process. It was identified that the ability of learners in using technology with an iPad is quite low. Therefore, training of using iPad should be offered according to the use of its functions and features comprehensively and simply. To solve the problem, the instructors need to prepare technology integration in teaching, mutual planning and working in order to have knowledge creation and a common understanding towards the principle of technology integration to reduce problems and limitations in using technology as an important tool for teaching and learning. According to Piyawat (2012), he said that most educational technology problems are the readiness of instructors. The instructors still lack readiness in teaching with technology and they do not emphasize innovation and information technology, including skills in creating innovative media for teaching management. Obviously, developing the efficiency of the learner must start from the development of instructors.

In the aspect of technology facilities, the most problems and obstacles were WIFI signal and internet usage for doing activities during class and installation point for releasing the WIFI signal in the learning areas. It was identified that stability and coverage of the internet signal should be improved to enhance more efficiency in learning management including the availability of other teaching aids related to technology usage

In the aspect of measurement and evaluation, the most problem /obstacle was authentic assessment

based on various actual conditions. It was identified that the criteria of assessment or evaluation were quite high and they should be adjusted to be aligned with learners' context. In addition, the assessment tasks did not follow the course contents in teaching and learning, since the instructors in each education center also lacked participation in the measurement and evaluation along with the RMP head office such as planning, the creation of standard criteria, defining tools for measurement and evaluation. As a result, the instructors have a deep lack of understanding in measurement and evaluation of each aspect. In addition, all aspects of measurement and evaluation should be the same standard and in line with the guideline of learning activity management as well as the context of an area and should be measured and evaluated in a variety of ways especially authentic assessments. According to the research results of Chanasuek Nichanon et al (2016), the research on the development of an educational management model for child caregiver recommends that learning measurement and evaluation should emphasize integrating projects of all courses in one semester so that measurement and evaluation can be the same standard and it can reduce the workload of students as well. The measurement and evaluation should be varied, including authentic assessment because it is more suitable than multiple-choice and subjective tests by joining in PLC activity and evaluate the learning outcome based on authentic assessment such as asking students to explain the process of working and the its advantages, discussing with learners in person or group depending on the assigned job in order to improve the evaluation process from the reflection of each pattern of learning management. From learning management of Ror Mor Por 2 project, learners must do a PLC activity that will be evaluated based on reality by asking learners about an assigned process that is regarded as ongoing evaluation and the advantages obtained from working after activities have finished. The discussion may be in person or group depending on the assigned jobs that will be consistent with the steps of conclusion and application. After learning activity management, the learners will gain experience and collect knowledge created by themselves, resulting in knowledge and understanding of things becoming a conclusion obtained from learned essence. Instructors should recommend learners to express their learning outcomes with reflection, knowledge exchanges with friends and behavior modification, including showing the guidelines for utilizing the benefits connected to

daily living in different styles and seeking knowledge continuously that will be a process and a procedure of evaluation that is consistent with the curriculum of early childhood education 2017.

In the aspect of supervising and monitoring, the most problem/obstacle which was the problem of supervising and monitoring process. According to integrated teaching among courses and co-teaching for each course, the instructors did not clearly know teaching and learning process evaluation. They were not sure that the evaluation of teaching was a separated course in case there was an integrated teaching or individualized evaluation for co-teaching in the same subject. To solve this problem, there should be the criteria and evaluation guidelines for instructors and clarify that instructors understand in the same direction.

Suggestions

From research results, we should have formulated guidelines for improving the process of learning technology management by using iPad devices in the RMP2 project, divided into each of the following areas:

1) Policy recommendations

1.1 The learning management plan should be established and consistent with the learning management process according to 3 patterns using appropriate technology as the key element in every process and must be consistent with the context of each different area at the Child Development Center.

1.2 There should be clear and distinguishable guidelines for arranging the learning activities of all 3 patterns of integrated learning management process and the learning activities require the various and appropriated integration of technology using the iPad to arrange the learning activities which should be practical and the instructors should consider the context of the learners and the environment of the learner as well.

1.3 There should be clear and distinguishable guidelines for measurement and evaluation in integrated learning management process in all 3 patterns by focusing on the workpiece, portfolio, and test with technology integration using the iPad as a key element to evaluate the ability of learners in using technologies.

1.4 The schedule of meetings for monitoring staff in the project, including the instructors in such semester should be determined to plan long-term operations for monitoring the performance in the aspect of the curriculum, instructor, learner, and learners' academic

performance. There should be a meeting between the coordinators from each educational center which may include the instructors in the same course from each education centers in order to exchange their experiences or other useful information related in the project. In doing so, to establish a convenient and fast communication method should be settled as a channel for coordinating and planning. In addition, in terms of the teaching evaluation of instructors, there should be an individual assessment of teaching results in every semester in order to improve the potential of teaching more effectively.

2) Recommendations for policy implementation

In order to be in line with the guidelines for improving learning management process with technology integration using the iPad in Academic Cooperation Program between the Department of Local Administration and Suan Dusit Rajabhat University, Phase 2 need to require a guideline for integrated participation in all processes as follows:

2.1 The person who is responsible for creating the learning plan for each course should be instructors who are experts in the course, including all related sectors. Those should participate in making a teaching plan together with the process of creating knowledge, understanding and in determining all aspects for the preparation of learning management in each course to acquire a learning management plan that has been accepted by all relevant sectors.

2.2 Regarding learning activities, there should be an apparent guidelines for the use of technology in teaching and learning to be consistent with the integrated learning management process according to each pattern by considering the diversity of technology and usage to achieve the maximum benefits of every course in order to gain knowledge and expertise in using technology and have a good attitude towards learning management with technology integration. In addition, there should be a standard test on the use of technology for learners in every semester in order to know the level of learners 'competency to assist the learners in needs.

2.3 For the measurement and evaluation, there should be a process for measurement and evaluation from the results of the 3 parts, namely, works, portfolio and learning management process in 3 patterns. In addition, determining the additional standards for measurement and evaluation conforming to the pattern of learning management can be done to increase the efficiency of the evaluation to be clear and accurate by providing

criteria or evaluation approaches. Moreover, all sectors involved should be allowed to plan and determine the details and criteria to be used based on the learning management plan and arrange the learning activities accord with the pattern of learning management process in each area.

2.4 For the supervision/monitoring of the learning management process, there should be at least one meeting per month for those involved in the project. In doing this, the long-term schedule meetings should be settled to clarify the results of operations and learning management within the project and to set the meeting among coordinators through conference meetings at convenient and fast communication channels to exchange useful information within the project.

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