

ผลของการใช้พอดคาสต์ในการฝึกสอนแบบจุลภาคด้วยตัวแบบระดับต่างกันที่มีต่อ
การรับรู้ความสามารถของตนเองและสมรรถนะการสอน
ของนิสิตนักศึกษาครุศาสตร์ศึกษาศาสตร์**

MThe Effects of Using Podcast with Different Levels of Modeling in
Micro Teaching upon
Self-Efficacy and Teaching Competency of Pre-Service Teachers**

วรวรรณ ก่อทอง และจิตทิพย์ ณ สงขลา
คณะครุศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

Worawan Kokong* and Jaitip Na-songkhla
Faculty of Education, Chulalongkorn University

บทคัดย่อ

การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อศึกษาผลของการใช้พอดคาสต์ในการฝึกสอนแบบจุลภาคด้วยตัวแบบระดับต่างกัน ที่มีต่อการรับรู้ความสามารถของตนเองและสมรรถนะการสอนของนิสิตนักศึกษาครุศาสตร์ศึกษาศาสตร์ การวิจัยครั้งนี้เป็นการวิจัยแบบผสมผสาน (Mix-method Design) ซึ่งข้อมูลเชิงปริมาณเก็บข้อมูลก่อนทดลอง (Pre-Experimental Design) แบบ The One-Group Pretest-Posttest Design ส่วนข้อมูลเชิงคุณภาพเก็บข้อมูลจากนิสิตนักศึกษาครุศาสตร์ศึกษาศาสตร์หลังการทดลองกลุ่มตัวอย่าง คือ นิสิตก่อนฝึกประสบการณ์วิชาชีพครู คณะครุศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ภาคเรียนที่ 2 ปีการศึกษา 2557 ซึ่งได้มาจากการเลือกกลุ่มตัวอย่างแบบเจาะจง (Purposive Sampling) จำนวน 12 คน เครื่องมือที่ใช้ในการวิจัยแบ่งออกเป็น 2 ส่วน คือ 1) เครื่องมือที่ใช้ในการเก็บรวบรวมข้อมูล ได้แก่ แบบวัดการรับรู้ความสามารถของตนเอง และแบบประเมินสมรรถนะการสอน และ 2) เครื่องมือที่ใช้ในการทดลอง ได้แก่ แผนการจัดการเรียนรู้การสอนแบบจุลภาค และพอดคาสต์การฝึกสอนแบบจุลภาคด้วยตัวแบบระดับต่างกัน วิเคราะห์ข้อมูลด้วยสถิติเชิงบรรยาย ได้แก่ ค่าเฉลี่ย ค่าส่วนเบี่ยงเบนมาตรฐาน การทดสอบค่าที (t-test dependent) ผลการวิจัยพบว่า การรับรู้ความสามารถของตนเองและสมรรถนะการสอนของนิสิตนักศึกษาครุศาสตร์ศึกษาศาสตร์ ก่อนทดลองและหลังทดลองแตกต่างกัน อย่างมีนัยสำคัญทางสถิติที่ระดับ .05

คำสำคัญ : การสอนแบบจุลภาค พอดคาสต์ การรับรู้ความสามารถของตนเอง สมรรถนะการสอน

* Corresponding Author
e-mail: k.worawan22@gmail.com

The Effects of Using Podcast with Different Levels of Modeling in
Micro Teaching upon Self-Efficacy and Teaching Competency of Pre-Service Teachers

** This work was supported by the T.H. 90th Anniversary of Chulalongkorn University Fund
(Ratchadaphiseksomphot Endowment Fund) for funding this research.

Abstract

The purpose of this research was to study the effect of using podcasts with different levels of modeling in micro teaching upon self-efficacy and teaching competency of pre-service teachers. The research applied a mixed-methods design. Quantitative design was a pre-experimental design of the one-group pretest-posttest design; qualitative data was collected from pre-service teachers at the end of the research. The sample of the study was 12 pre-service teachers of the Faculty of Education of Chulalongkorn University who were studying in the second semester of the academic year 2014; they were selected by purposive sampling. The research instruments for collecting data were the self-efficacy assessment and the evaluating teaching competency assessment and the experimental instruments were the micro teaching plan and the podcasts with different levels of modeling in micro teaching. The data analysis was performed by descriptive statistics, average, standard derivation and t-test dependent. The findings revealed that the self-efficacy and teaching competency of pre-service teachers before and after doing the experiment were different significantly at a statistical level of 0.05

Keywords: Micro teaching, Podcast, Self-efficacy, Teaching competency

Introduction

Encouragement of the pre-service teachers to develop their self-efficacy to be able to indicate the teachers' acknowledgement, understanding, and confidence in their capability, allowed the teachers to behave and express their opinions as expected. Additionally, they would be intent to succeed in their objective. Teaching competency is the ability to integrate knowledge, skills, motivation, and personality before participating in a teacher's professional practice experience with their characteristics and personalities; self-efficacy allows decision making about an ability to perceive, understand and have confidence to show behavior and thinking as expected, which caused an intention to increase the possibility of task completion. There are four main factors related to self-efficacy: mastery experiences, modeling, verbal persuasion, and emotional arousal (Evans, 1989 as cited in Iarmsupasit, 2010). Teaching competency is the ability to integrate knowledge, skills, motivation and personality for practice in teaching and learning, according to the skill of the assigned micro teaching.

Micro teaching was trained for practicing teacher trainees individually before participation in experimental teaching by using simulation for teaching and learning in real classrooms. The experimental teachers were able to know the result of their own practice quickly via video-recording and evaluations from other teaching colleagues and a master teacher. Micro teaching should consist of a brief lesson, a small classroom and a short period of time in agreement with the personnel competency of teachers' model mentioned by Rick (2010). It is a method of personal competency development for teachers that uses video-recordings in teaching according to the concept of developing a teaching method of a student teacher by using video to reflect on teaching and learning via reviewing videos of their own teaching. Therefore, they could consider themselves to perceive their behaviors and student's interactions to become aware and motivated to develop personal competency, in conformance with perceived self-efficacy. Perceived self-efficacy refers to modeling presentation; an efficient technique for changing personal behavior which assumes that change depends on personal factors (Iarmsupasit, 2010). Additionally, the symbolic modeling presentation can control behavior, be reused and is uncomplicated to use in groups.

A podcast is defined as a medium of audio and digital video through the internet which can be downloaded via mobile devices and computers. The learners could select the channel to watch or download the media to keep in their own equipment. A podcast could provide mediums that meet the needs of students (Butchan, 2009). Therefore, the researcher was interested to use podcasts to create a model video recording for students before participating in the practice of teaching according to a method of practice (micro teaching). In addition, the researcher believed that students of the Faculty of Education have been previously assigned to use podcasts in practice of micro teaching with modeling to support their self-efficacy and teaching competency.

Objectives

1. To study pre-service teachers when observing multilevel modeling.
2. To study the performance multilevel modeling of pre-service teachers who have differences in self-efficacy.
3. To study the relationship between the self-efficacy and teaching competency of pre-service teachers.

Research Methodology

The research applied a mixed-methods design. Quantitative design was a pre-experimental design of the one-group pretest-posttest design and evaluated self-efficacy and teaching competency in a sample group before the experiment. Participants were assigned to join learning activities conforming to the learning prescribed by micro teaching. The research used three levels of podcast with modeling: personality and wearing skills, communicating skills and speaking skills, and behavioral skills. Then, testing a measure of self-efficacy and evaluating the teaching competency of the sample group after the experimentation was performed. Qualitative data was collected from the teacher and the end of the research.

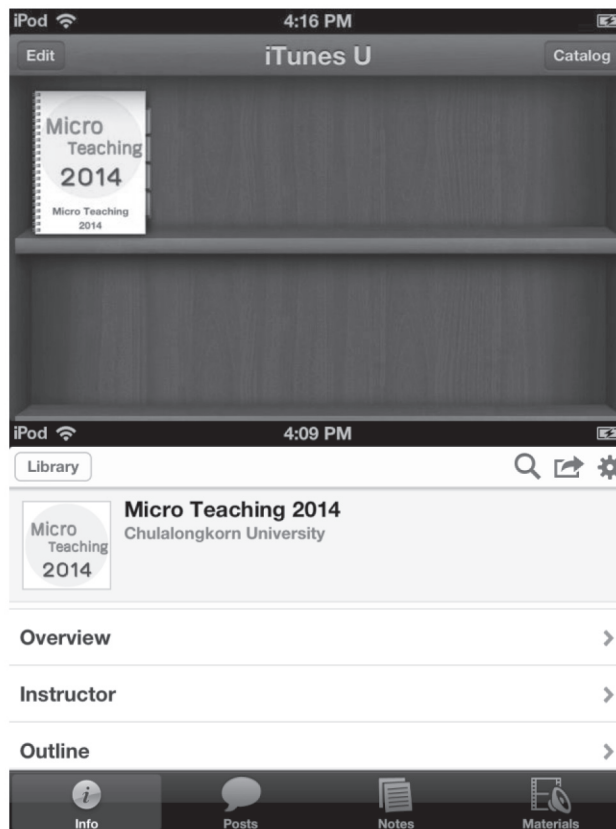


Figure 1 Example of micro teaching course in iTunes U Application

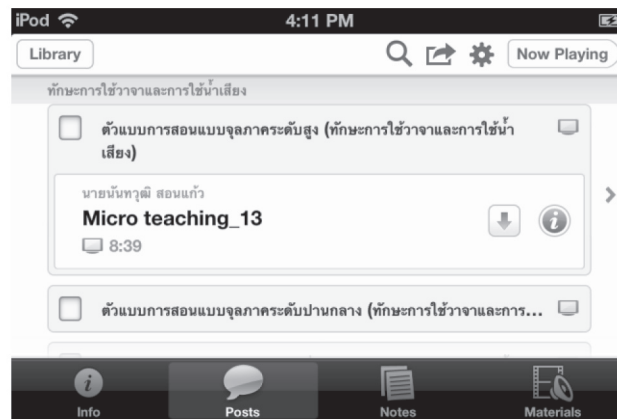


Figure 2 Example of different levels of modeling in micro teaching in iTunes U Application



Figure 3 Example of micro teaching video feedback of pre-service teachers in iTunes U Application

The sample of the study was 12 pre-service teachers of the Faculty of Education of Chulalongkorn University who were studying in the second semester of the academic year 2014 and were selected by purposive sampling. The research instrument used could be divided into two parts: 1) the instruments for collecting data were the self-efficacy assessment and the evaluating teaching competency assessment and 2) the instruments of experiments were the micro teaching plan and the podcast with different levels of modeling in micro teaching. The data analysis was performed by descriptive statistics, average, standard derivation and t-test dependent.

Results

1. Comparison of the personal self-efficacy prior and post of the experiment, the researcher found that the results were significantly different at a statistical level of 0.05 as shown in the Table 1.

Table 1 The comparison of personal self-efficacy with analysis of data by using mean, standard deviation, and t-test dependent

The comparison the personal self- efficacy	\bar{X}	S.D.	difference	t	p
Pre-test	3.01	0.37	0.85	10.17	0.000*
Post-test	3.86	0.35			

* significant at a statistical level of 0.05

2. Comparison of the results of teaching competency about the ability of personality and appearance both prior and after the experiment; the researcher found that teaching competency about personality and wearing both prior and after the experiment were different significantly at a statistical level of 0.05 as show in the Table 2.

Table 2 Comparison of the results of teaching competency about an ability of personality and appearance with analysis of data by using mean, standard deviation, and t-test dependent

An ability of personality and appearance	\bar{X}	S.D.	difference	t	p
Pre-test	3.16	0.25	0.98	6.93	0.000*
Post-test	4.14	0.45			

* significant at a statistical level of 0.05

3. Comparison of the results of teaching competency related to the ability of verbal communication and vocal usage, both prior and after the experiment; the researcher found that teaching competency related to communication skills, both prior and after the experiment, were different significantly at a statistical level of 0.05 as show in the Table 3.

Table 3 Comparison of the results of teaching competency about the ability of verbal communication and vocal usage with analysis of data by using mean, standard deviation, and t-test dependent

An ability of verbal communication and vocal usage	\bar{X}	S.D.	difference	t	p
Pre-test	3.44	0.51	0.40	3.46	0.005*
Post-test	3.84	0.32			

* significant at a statistical level of 0.05

4. Comparison of the results of teaching competency related to the ability of teaching behavioral expression, both prior and after the experiment; the researcher found that teaching competency related to behavioral skills, both prior and after the experiment were different significantly at a statistical level of 0.05 as show in the Table 4.

Table 4 Comparison of the results of teaching competency about the ability of teaching behavioral expression with analysis of data by using mean, standard deviation, and t-test dependent

An ability of teaching behavioral expression	\bar{X}	S.D.	difference	t	p
Pre-test	3.23	0.28	0.41	6.04	0.000*
Post-test	3.64	0.35			

* significant at a statistical level of 0.05

5. The following was the conclusion of the self-reflection of the pre-service teachers' skill practice

5.1 From the first practice, most pre-service teachers had chosen to study the podcast modeling for micro teaching in a high level because it was the best of podcast modeling for a micro teaching and they needed to investigate good teaching techniques to apply for improving the efficiency of their own teaching.

5.2 From the second practice, most pre-service teachers re-studied the podcast model in micro teaching with the same level podcast as the first practice because

they deemed that it was the best and standard modeling in micro teaching. Moreover, they needed to investigate some good points and weak points of each level for improving teaching skills like the model.

5.3 After the second micro teaching practice, most pre-service teachers deemed that they were able to be a model in teaching in all the three skills at an average level, namely, the ability of personality and appearance, the ability of verbal communication and vocal usage and the ability of teaching behavioral expression. However, they found weak points that needed to be improved and developed.

Discussion

From the data analysis of the research, the researcher found the significant issues as follows:

Comparison to the personnel self-efficacy and teaching competency, both prior and post of the experiment, the researcher found that all of the three parts of the personal self-efficacy and teaching competency, namely, the ability of personality and appearance, the ability of verbal communication and vocal usage and the ability of teaching behavioral expression, were different significantly at a statistical level of 0.05. This meant that the pre-service teachers, who used podcast with different levels of modeling in micro teaching, had higher personal self-efficacy for all the three teaching competencies. From the self-reflection of the pre-service teachers' skill practice in micro teaching, the researcher found that most pre-service teachers selected a high level of the podcast model because they needed to develop teaching skills to be equivalent to the model for improving their own teaching skills. Moreover, from the second practice, most pre-service teachers re-studied the podcast model in micro teaching with the same level podcast as the first practice because they deemed that it was the best and a standard model of micro teaching. Moreover, they needed to investigate some good points and weak points of each level for improving teaching skills like the model.

After the second micro teaching practice, they, additionally, deemed that they were able to be a model in teaching in all the three skills at an average level since they found the weak points that need to be improved and developed. In conclusion, using podcasts in micro teaching practice helps pre-service teachers improve their teaching skills. A podcast was an appropriate medium to record the practice of micro teaching. The

students had the ability to observe their own teaching skills in practice and their teaching behavior via modeling. The podcast also had a specific qualification for users who cannot connect to the internet.

The data was collected in categories; therefore, users could use the program or download the applications to keep on their own mobile device promptly. The students, consequently, could review their own micro teaching and practice at anytime and anywhere. Moreover, using the podcast in practice of micro teaching helped students feel more confident in their teaching so they could function efficiently and believe that they could achieve their teaching goal and conforms to the study of Sumrit, Tipsuwan & Phonak (2013). The mentioned study had developed studying method by using podcast technology for iPad for promoting knowledge and understanding of the basic research of computer education. The research found that the learning method by using podcast technology for iPad for promoting knowledge and understanding of the basic research of computer education was suitable at the excellent level and suitable to use in education, met the needs of users at a good level, reduced paper usage and encouraged the students to pay attention in studying.

Micro teaching practice, additionally, was a factor to support the students to improve their self-efficacy and keep up all the three teaching competencies and also help them to have a clear teaching direction, become familiar with teaching environments, and able to solve problems and control the classroom effectively. Micro teaching practice was one of the processes for promoting the mentioned skills, because micro teaching practice could support teaching practice skills systematically and effectively and also helped for practicing problem solving and trained students to become familiar with the teaching environment before being a teacher. Therefore, students would recognize their strengths and weaknesses by reviewing the performance from tools that helped them pay attention to solve a problem, be open-minded for any comments, and create better relationships and a good working atmosphere (Somnam, 2003). For teacher trainees, feedback was a basic point of the micro teaching practice that helped to show the performances, helped to understand themselves, become able to evaluate their teaching skills and developed teaching behavior. Guidelines on receiving the feedback were observing or listening, teaching skills via tools such as video- recordings and suggesting from observers (supervisor teacher, colleagues).

Apart from the stated factors, modeling was one of factors that helped pre-service teachers to improve their self-efficacy since the modeling technique was the most effective technique for changing personal behavior. The technique was developed from the Bandura's Social Learning Theory which states that human learning developed from the observation process through modeling which was dissimilar to learning from direct experiences, which happened through a trial-and-error method. In learning through modeling, one model, could instruct both thinking and expression together. In daily life, we could learn from others experiences, indirect experiences and, mostly, be informed of social situations via media. Bandura asserts that modeling has an effect on personal behavior in three areas. According to Bandura (1969) as cited in Iamsupasit (2010), it was demonstrated that modeling had an effect on the personal behavior in three areas: Firstly, the acquisition of new behaviors or skills by learning from a model to perform new behaviors in a person. Secondly, the inhibition or dis-inhibition of the observed behavior based on the modeled behaviors, in case that the result of the modeled behaviors was dissatisfaction, the observer was unlikely to react like the model. However, in case that the observer used to perform the inhibited behavior and found that the modeling acted the same action, but received a positive result, the observer was likely to react as the model. This meant the inhibited behavior became uninhibited. Lastly, the expression of the acquired behaviors or an increase of the expression used by a model was a signal to motivate a person to express his/her behaviors.

This conforms to the research of Yi and Davis (2003); they developed and examined the learning pattern by observing computer software training and information searching skills from a sample of 95 persons. This research examined the learning process through observation by assigning the sample to imitate the identified model. Consequently, the sample group learned about software and improved the skills of searching better than before attending the training. Along with the study of Srisaen (2004), that studied the use of cartoon book as a model to promote the ethical behavior of the Prathom Suksa VI students of the Khon Kaen University Demonstration School (Educational science). The researcher found that the ethical behavior of the experimental group was more eminent than the control group. Moreover, post experiment, the ethical behavior of the experimental group was higher than pre experiment. Wongphan (2001) studied about the result of learning from symbolic modeling by using a video accompanied with

colloquium toward the nursing care behavior of 15 on-duty nurses. The sample was the on-duty nurses of the Phosai hospital and the study was conducted during January-March, 2002. The results show that post learning of the symbolic modeling by using a video accompanied with colloquium was better than the pre-learning significantly at the statistical level of 0.05. Karnjanapee (2010) studied and compared the result of the acquisition of a live model and a symbolic model toward the improvement of the kindness of the Prathom Suksa V students, Pibool Upphatham School. The samples consisted of 114 students and were divided into two experimental groups and one control group. The researcher found that after the experiment, there was no difference of kindness between first experimental group and control group. Only for the second experimental group, the kindness score after the second experiment was higher than before the experiment.

Suggestion

1. According to the research, using podcast of modeling in micro teaching can increase the self-efficacy and teaching competency of pre-service teachers. Thus, instructors or associated educational organization should use podcast of modeling in micro teaching with pre-service teachers for practicing micro teaching skill to encourage the pre-service teachers' confidence and getting experiences before training teaching in the school.
2. According to the research, pre-service teachers who repeated to study podcast of modeling in micro teaching, will have better teaching competency and be a model of micro teaching. Therefore, before pre-service teachers training teaching in the school, they should study podcast with different levels of modeling in micro teaching hard to acknowledge pros and cons of podcast with each level of modeling in micro teaching. Afterwards, the students will be able to improve and develop their teaching.
3. For the further research, there should be a study about others teaching competency dependent variable such as class management competency, class building activities competency and choosing educational tools competency in order to study whether teaching competency improved by using podcast with different levels of modeling in micro teaching.

4. For the further research, there should be a study with pre-service teachers in other majors such as english, science, and elementary education.

5. For the further research, there should be a study about the result of using video in others teaching which will has an effect on pre-service teachers' self-efficacy and teaching competency.

References

- Butchan, A. (2009). *Effect of supplementary teaching with podcast using self-regulated learning strategies in electronic media production for education course on learning achievement and self-regulation of undergraduate students*. (Master's thesis). Chulalongkorn University, Bangkok. (in Thai)
- Iarmsupasit, S. (2010). *Theories and Techniques in Behavior Modification*. Bangkok: Chulalongkorn University Press. (in Thai)
- Kanchanapee, P. (2010). *Development of kwam-mee-namjai of prathom suksa five students, Phiboonuppathum Shool, through learning from live models and symbolic models*. (Master's thesis). Department of Educational Research and Psychology. Faculty of Education, Chulalongkorn University, Bangkok. (in Thai)
- Rick, S. (2010). Using video self-analysis to improve the "withitness" of student teachers. *Journal of Digital Learning in Teacher Education*, 26(3), 101-110. V26 n3 p101-110.
- Somnam, N. (2003). *Teaching principles*. Bangkok: Faculty of Education, Suan Sunandha Rajabhat University. (in Thai)
- Srisaen, K. (2004). *The Effect of Using Comic Cartoon Modeling on Pratomsuksa IV Student's Moral Behavior Khon Kaen Demonstration School Khon Kaen University*. Retrieved July 26, 2013, from <http://www.tci-thaijo.org/index.php/gskku/article/view/31663/27191>. (in Thai)
- Sumrit, C., Tipsuwan W. & Phonak, D. (2013). *The Development of Learning Model Using Podcast for iPad to Strengthen the Knowledge and Understanding of Techniques for Basic Research in Computer Education*. Retrieved August 20, 2013, from <http://http://gsbooks.gs.kku.ac.th/55/cdgrc13/proceedings.html>. (in Thai)

- Wongphan, T. (2001). *Effects of learning by using video symbolic modeling and group discussion on caring behaviors of staff nurses*. (Master's thesis). Chulalongkorn University, Bangkok. (in Thai)
- Yi, M. Y. & Davis, F. D. (2003). Developing and validating an observational learning model of computer software training and skill acquisition. *Information systems research*, 14(2), 146-169.

Authors

Miss Worawan Kokong

Department of Educational Technology and Communications,
Faculty of Education, Chulalongkorn University.
133 PhayaThai Road, Patumwan, Bangkok, Thailand 10330
e-mail: k.worawan22@gmail.com

Associate Professor Jaitip Na-songkhla

Department of Educational Technology and Communications,
Faculty of Education, Chulalongkorn University.
133 PhayaThai Road, Patumwan, Bangkok, Thailand 10330
e-mail: jaitipn@gmail.com

