Researching anxiety of pre-service teachers in teaching science and mathematics program

Veena Prachagool[1], Prasart Nuangchalerm[2], Juhji [3], Thanapol Thavornsil[4]
[1,2]Faculty of Education, Mahasarakham University, Thailand
[3]Faculty of Education and Teacher Training, Universitas Islam Negeri Sultan Maulana Hasanuddin Banten, Indonesia
[4]Rajamangala University of Technology Tawan-ok, Chantaburi Campus, Thailand

Article Info

ABSTRACT

This study purposed to investigate researching anxiety of pre-service teachers that might want to explain why they are able to learn successfully in the context of difference in program of study. There were 15 pre-service teachers in M.Ed. program of teaching science and mathematics voluntary participated. Learning Anxiety Questionnaire (LAQ) was employed their anxiety towards learning through Google Form. The study revealed that pre-service teachers had anxiety at medium level. However, some of item present they had different level of anxiety. The effective learning for decreasing level anxiety needs to be more discussed.

Corresponding Author:

Prasart Nuangchalerm
Faculty of Education
Mahasarakham University
Kham Riang, Kantharawichai District, Maha Sarakham, Thailand
Email: prasart.n@msu.ac.th

1. INTRODUCTION

The world is now shaping from reductionist view into holistic view in all fields of study. Due to the rapidly moved of information technology and educational supports which enhance learning behaviors in positively. In addition learning environments, nature of learning, and knowledge distribution are ready adapted with varying amounts of creativity. Thus, some of the most important learning tools and skills that individual must have in order to be successful in life working. Necessary learning skills for 21st century citizens are promoted, but educators ignore affective domain [1], [2], which is crucial factor of attitude towards learning. Open mind in learning, learners can make its connection to cognitive and psychomotor domains as well. The education in modern society forces learners to have more knowledge and process skills which curriculum designed [3], [4]. It can make them to have high levels of anxiety, it can interfere with individuals less effective in and less satisfied with their current role through classroom activities [5]. And yet, according to the Mkrtchian, *et al.* [6] reported that mental health problem in worldwide is mostly concerned in anxiety. Anxiety makes avoidance behavior to social interaction and unhappy to face with physical and biological world surroundings.

The learning tools in hands for 21st century learners cannot be denied inquiry-based learning, collaborative learning, critical thinking, creative thinking, and researching skills. It is a basis for enhancing necessary learning skills through effective communication [7]. Researching is employed for gaining insight into new knowledge and the authentic learning development [8]. The research methodology in education is

one course that pre-service teachers must have to enrolled, and for preparing them to conduct thesis in a variety of educational contexts. It covers the range of methods to understand process of education and how to develop learners to meet the goal and philosophy of education [9]-[11]. The course may be influence to pre-service teachers by different level of learning anxiety, especially new professional development from scientist to be social scientist [12].

Thus, process of teacher education is now calling for professional best in career achievement, and also it must be reflect to the growth of children in suitable ways based on 21st century citizenship. We cannot deny that teachers' quality make learners' quality as well. They have frustration and not match the learning style from previous program of study. While pre-service teachers are initial key to implement professional development, they can help students to get success and achieve through effective instruction. Most program in teacher development allow then to learn and practice by competency-based development. They have to learn in condensed contents, pedagogical strategies are also incubated, and technology to enhance learners in the 21st century. The concept of teacher development in this era needs pre-service teachers to think and do for making learners who can face with future and uncertainty world. Learners have to run necessary learning skills, innovate things for society, live with others in happiness, and have responsibility to society.

Researching can make pre-service teachers to think and do for building their knowledge in especially educational research. Thus, they are graduated in the field of pure science and mathematics which are fact and concrete to well explain of what they do through scientific method [13], [14]. They employed way of science do and explain through reliable method, and finally published of what they did to public. The program of study in master degree, they have to change field of study and style of learning to be social scientist or educator. It may be influenced to their way of think and do because social scientists have to aware context of study with reliable methods [15]. Pre-service teachers in teaching science and mathematics program seem to be learned much more in the way of successful. They may be shifted their paradigm of study and lead them to have anxiety in research methods, also way of researching in educanal contexts [16]-[20].

The research, however, that the ways to successfully cope with anxiety in order to effectively pursue their learning goals in field of education. Thus, this study aims to investigate researching anxiety of pre-service teachers that might want to explain why they are able to learn successfully in the context of difference in program of study. Anxiety is the situation that learners express their feeling with unhappy towards learning. The previous studies showed that the anxiety leads learners boring with learning atmosphere and influence to learning achievement, In addition, it harms their health to live in daily life by physical and mental parts. Preference of learning and anxiety can make a correlation that involves a continuous process of learning and self-development.

2. RESEARCH METHOD
2.1. Participants
The study employed pre-service teachers in M.Ed. program of teaching science and mathematics. There were 15 pre-service teachers voluntary participated. They were all first semester enrollment of early year program. The course research methodology for teaching science and mathematics is established to them in teacher as researcher concept and also preparing them for thesis guidelines in successful. They are consisted of four males and 11 females who are not enrolling any course in field of education because all of them graduated in bachelor program of science with different majors. The previous courses allowed them to learn in the way of what scientists or mathematicians do. So, they change mind to be teacher by entering master degree program in field of education. The research question is wonder their anxiety about learning in different background in the case of research method for teacher, which differ from scientific research and controlled variables from laboratory into classroom.

2.2. Instruments
The researchers employed research instrument in data collection. Learning Anxiety Questionnaire (LAQ) is developed 14 items with 5-point rating scale. The questionnaires are validated by three experts and then revised to suitable items. The item is independently to investigate how pre-service teachers struggle with learning. Mostly items are concerned research methods in education and also research conducting in successful.

2.3. Data collection
This research employed survey method for investigating learning anxiety. Pre-service teachers are instructed to the process of data collection in course of study. Fifteen weeks are designed for learn concepts and methods of research in education. The last week of course, they expressed their anxiety towards learning

through Google Form. They are independently responded to questionnaires and submit answer by themselves.

2.4. Data analysis

Data were analyzed by descriptive statistics, mean and standard deviation. Learning anxiety of pre-service teachers can be calculated and interpreted by indicating into 5 levels of mean for interpreting: highest (4.51-5.00), high (3.51-4.50), medium (2.51-3.50), low (1.51-2.50), and lowest (1.00-1.50). Also, data were analyzed and grouped by level of anxiety as well. Data can be shown in terms of descriptive statistics for answering research question.

3. RESULTS AND DISCUSSION

The findings can be reported in terms of level of anxiety as in Table 1. The overall situation which pre-service teachers in teaching science and mathematics program can be summarized that they had anxiety in at medium level. Even though they are change field study from those pure mathematics and pure science to be teacher education, especially experiment in scientific laboratory into social classroom or school environments. It seems to be complex to them, but they can adjust mindset to learn by employing scientific method to social process.

Table 1. Learning anxiety of pre-service teachers

Item	Mean	SD	Level of anxiety
I feel headaches when the instructor explains about research too quickly	2.73	0.46	Medium
I do not like to attend research course	2.00	0.85	Low
I feel stressed to develop a research proposal	3.20	0.86	Medium
I feel stressed to answer questions about research issues	2.87	1.13	Medium
I do not dare to meet my teacher in research methods class	2.20	1.08	Low
I do not dare to answer the professor, because it is afraid to answer the wrong	2.93	1.44	Medium
I am not confident about the issues to do	3.67	0.90	High
I am not sure how to search for research data	3.47	0.99	Medium
I am not comfortable when the instructor will be doing research	3.07	1.16	Medium
I am concerned about the research to do not be interesting	4.07	1.16	High
I stressed the need to take statistics in the research	3.53	1.19	High
I am concerned about writing a report in a research course	3.73	0.96	High
I do not enjoy searching for the research	3.07	1.22	Medium
I stressed the exam in the research course	3.60	1.06	High
Overall	3.15	1.17	Medium

The items which they pay attention in high level of anxiety by five items i.e. *"I am concerned about the research to do not be interesting"*, *"I am concerned about writing a report in a research course"*, *"I am not confident about the issues to do"*, *"I stressed the exam in the research course"*, and *"I stressed the need to take statistics in the research"*. That's not over the estimation because they are incubated scientific ways for 4 years before entering teacher education program. They mostly familiar with scientific writing, they can give readers with short describing through universal communication or experiment. But in the field of social science needs more explanation with imagination to readers. The field of teacher education is not only learn in content, but also characteristics of social scientists and role model should be implemented [21]. They learn prior knowledge in the way of science, focus on science and science education do that may serve as an anxiety-reducing practice in the classroom. Teacher may be reinforce and engage pre-service teachers to positive environment [6], [22].

However, the low level of learning anxiety can be reported that *"I don't like to attend research course"* and *"I don't dare to meet my teacher in research methods class"* which are deeply behaved to instructor. They showed the low anxiety by items "*I don't like to attend research course*" and "*I don't dare to meet my teacher in research methods class*" They learn to far from anxiety with the course and dare to meet with research methods in the field of education. They change their opinion towards learning, researching anxiety in these items are shaped them to be educational researcher due to they learn to be scientist before [23]. They may be emphasized on learning content which relevant to the difficulty in different level and situation. That is, they have to focus more learning for decreasing anxiety in the research method in education [24]. They can performed which scientists do and then bring the reliable methods to educational researcher did.

The process of learning may be made satisfaction and non-satisfaction into different learning contexts. The study concerns research methodology course which lead graduate students improve thesis

proposal. Contents and learning atmosphere seem to be frustrated and control students to understand about and of research methodology. However, they can learn and do more study by various kinds of methods, especially internet technology open the windows of learning opportunities. They can access learning resources, self-study, sharing research and lesson experiences, more talking with peers, and easy to communicate with other scholars. That is the reason to do that they have less anxiety with subject contents. The learning atmosphere must have positive interaction as well as teacher role need to be facilitator or coach in the way of classroom successful. Students can construct their knowledge through suitable way and learn to be good young social scientists [20], [25], [26].

4. CONCLUSION

Pre-service teachers showed their anxiety in research method in education classroom by different level. It might want to discuss in strategies to anxiety decreasing and how to help them success in course and thesis conduction through effective learning. However, they have to adapt and learn from the course setting to success in their thesis proposal. The learning environment should have more flexible and let them learn through various kinds of methods. Tools for learning can be designed by internet technology and online resources to scaffold them by less anxiety with research methodology learning.

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BIOGRAPHIES OF AUTHORS

Veena Prachagool is an assistant professor of curriculum and instruction. She has been working for Faculty of Education, Mahasarakham University in Thailand. Her research focuses on professional development, teacher development, early childhood education, and teacher education in early childhood education program.

Dr. Prasart Nuangchalerm is an associate professor of curriculum and instruction. He has been working for Faculty of Education, Mahasarakham University in Thailand. His research focuses on teacher education, inquiry-based learning, pedagogical content knowledge, science teaching, and professional development.

Juhji graduated from Department of Mathematics and Natural Sciences Education, Indraprasta PGRI University in 2010. He has been working as a teacher for eleven years in several schools, elementary school to high school. He is a Lecturer on Universitas Islam Negeri Sultan Maulana Hasanuddin Banten, Indonesia in 2014.

Thanapol Thavornsil is a lecturer in sport science program. He is now working for Rajamangala University of Technology Tawan-ok, Chantaburi Campus, Thailand. His research focused on sport science development, elderly health promotion, and community recreation.