

## Preschool Teacher Candidates' Research Qualifications and Anxiety Level towards Research

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### Abstract

#### *Problem Statement*

Acquisition of research qualifications are one of the most demanded learning outcomes of education faculties. There is great emphasis on building a research identity by developing the skills of students in the department of education faculties. However, very few surveys analyze the current situation of university students in the department of Early Childhood Education concerning research qualifications and anxiety level towards research.

#### *Purpose of Study*

This paper attempts to reveal the relationship between research qualifications of preschool teacher candidates and their anxiety towards research and whether or not the research qualifications of preschool teacher candidates and their anxiety level differ according to numerous variables.

#### *Methods*

A *correlational survey model* is used. One hundred and eighty teacher candidates were reached during their education as freshmen, sophomores, juniors, and seniors in the department of early childhood education at Mersin University. "The Anxiety towards Research Scale" and "The Research Qualifications Scale" were implemented. Descriptive statistics, Pearson Correlation Coefficient and difference of means tests were implemented in order to determine findings.

#### *Findings and Results*

This study indicates preschool teacher candidates possess high research qualifications and low levels of anxiety towards research. The results show gender makes no significant difference in their research qualifications and their level of anxiety towards research. When analyzed at class level, preschool teacher candidates in the 4<sup>th</sup> year of study

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possessed the highest research qualifications and fairly low research anxiety. In terms of research anxiety, undergraduates in the 3<sup>rd</sup> year of study possessed the highest level of anxiety towards research, and 2<sup>nd</sup> year undergraduates possessed the lowest level of anxiety. Also, individuals who had research experience were aware of the scientific research process.

#### *Conclusions and Recommendations*

It is suggested that instructors of these courses should identify the current knowledge of undergraduates about the class topic and should attempt to correct student misconceptions about research. The scientific research methods course is suggested to be taken in the first year of the early childhood education program. Also, for research experience, undergraduates should be given more opportunities to participate in research environments, spend more time there, have easy access to necessary materials, and be given guidance. Also, undergraduates should be supplied with previous research project samples so they can examine them in detail, which will probably decrease their anxiety and apprehension levels. Lastly, it is a good idea to create a web portal about their own authentic research projects.

*Keywords:* Research qualifications, anxiety toward research

### **Introduction**

In our global age in which knowledge is accepted internationally as the greatest power, the basic goal of education is to create a knowledge society comprised of individuals who know how to get, select, and reproduce knowledge. Büyüköztürk (1999) expresses that the main purpose of an education system is to raise individuals who produce knowledge, share these productions, and possess research qualifications, scientific attitudes, and behaviors. Universities who serve the function of contributing to social and scientific developments by conducting research play a key role in educating individuals with a researcher identity. However, research is viewed by undergraduates as one of the most challenging tasks at universities, and students in many disciplines complain about having difficulty in research courses (Murtonen, 2005). Quarton (2003) argues that “because few universities require an assessment of information literacy as a condition of graduation, many students move from course to course with only a marginal understanding about how to use research tools and how to evaluate resources”. There is a social perception among societies that it is the responsibility of universities to supplement individual research qualifications. However, acquisition of research qualifications should not be limited to and put on the shoulders of higher education institutions; this should also be expanded to primary and secondary education institutions, at least for basic skills. Karasar (1974) puts emphasis on this and notes that research education is not a specialization education concerning universities; in contrast, it is a general culture education that should be practiced by educational institutions at all levels. According to Karasar, it is not sufficient for only scientists to be the only ones in society who can conduct scientific research; policy makers should make sure that even everyday citizens possess research culture at a certain level.

When we have a look at literature, it is easily noticed that research has been defined in many ways. The Turkish National Education Ministry basically defined research as a “learning and knowledge gathering process which includes asking questions, investigation, evaluation, interpretation and decision making” (MoNE, 2013). According to Kara (2013), research is a process of systematically collecting data and making an analysis. According to Rooney (2011), research is organized knowledge that chooses some part of an event as a research topic, selects the population, and seeks to come up with laws depending on experimental methods and reality. Toy and Tosunoglu (2007) state that research studies which are not reliable and valid lead to a faulty and unfavorable development of society and science by emphasizing that research must be correct, reliable, and foolproof. Therefore, there is a great need to supply research validity and reliability in order for the proper development of society and science, and individuals should be educated with consideration of these concerns. Reliable and accurate studies are closely related to whether or not individuals possess the necessary research qualifications. Quarton (2003) draws a framework for a mastery of research skills and presents some key points that foster the acquisition of research skills in the university classroom. She lists these points as “focusing the topic, teaching strategy (advice for course practitioners), planning an effective search, and searching the literature”. Because the education system aims to raise individuals with scientific attitudes and behaviors, it is fundamental that teacher candidates graduate possessing the necessary research qualifications and positive attitudes towards research. However, most of the time undergraduate teacher candidates struggle more in research than in any other course. Papanastasiou and Zembylas (2006) explain this as “being confronted with new and challenging material”. They assert that “undergraduate students suddenly find themselves being introduced to completely new concepts that are often accompanied by mathematically-based ideas, and are confronted with new and challenging material likely to trigger a number of responses from these students, including stress, uncertainty, and anxiety”.

Research qualifications have been listed by Büyüköztürk (1999) as being capable of: “developing a research project; limiting a topic and defining a research problem; reviewing literature in order to reach studies and periodicals about a specific subject; stating the research problem as a hypothesis, question statement, or sentence; collecting raw data via convenient tools (questionnaire, observation, meeting, document scanning); evaluating the collected data properly (analyzing); and preparing a scientific report by considering its rules and principles”. Bağcı- Kılıç (2003) defines the steps of how to acquire research qualifications under the following headings:

- Scientific method (hypothesizing, making observations, making deductions, generalization)
- Experimental design (experimental control, materials, and process)
- Scientific measurement (validity, duplication, experimental error, coherency, scale)
- Using scientific means and conducting ritual experimental operations

- Collecting, organizing, and representing data (units, tables, figures, and graphics)
- Defining and evaluating the data

Teachers who carry the vital responsibility to create a knowledge society should at first themselves possess research qualifications. Considering that the purpose of an education system is to raise research individuals who possess scientific attitudes and behaviors, it is of capital importance that teacher candidates graduate from universities having research qualifications and positive affective attitudes towards research. Auger and Wideman (2000) point to this issue by stating that it must be a priority for policy-makers to supply teacher candidates with these skills. In the literature there are studies that look for the obstacles that hinder developing a positive attitude towards research. Büyüköztürk (1999) emphasizes that a negative attitude towards research possibly results from the fear and anxiety felt during the research process. Anxiety is defined as the possibility of danger from the inner or outer world, or any feeling perceived and interpreted as dangerous by the individual (Arı, Savaş and Konca, 2010). Anxiety, whose stimulator mostly remains ambiguous, is accepted as a really complex feeling. Anxiety has been defined by Çokluk-Bökeoglu and Yılmaz (2005) as “not researching when not being forced, to feel bored when one has to do research, to feel bothered when one thinks about doing research, not feeling self-confident about doing, research and behaviors like these”. Additionally, anxiety could demonstrate behavioral symptoms that differ from person to person. Anxiety symptoms can roughly be listed as: “trembling, sweating, mind confusion, fainting, rapid heart palpitations, difficulty breathing, continuous exhaustion, avoidance behavior, and nervousness” (Australian Psychological Society, n.d.). Onwuegbuzie and Wilson (2003) analyze the three factors that contribute to research anxiety: situational, dispositional, and environmental. Situational factors include prior knowledge and experience. Dispositional factors are those like self-esteem in engaging in math, research statistics, and the perceived usefulness of these topics. Environmental factors are comprised of learning style, age, gender, and ethnicity. There may be other additional factors leading to research anxiety. For instance, Onwuegbuzie (2004) came up with the academic procrastination factor related to research anxiety after studying 135 graduate students from education faculty. Nearly every other person reported a procrastination factor while reading assignments, studying for tests, and writing papers. Onwuegbuzie (2004) claimed that procrastination and research anxiety appeared to be significantly related. Williams (2010) conducted a study on statistics anxiety that indicated instructor immediacy is significantly related to six factors of statistics anxiety, with immediacy explaining between 6% and 20% of the variance in student anxiety levels. This is an important finding that shows the necessity of instructors using immediacy behaviors in order to decrease anxiety.

According to Stenhouse (1985), teacher candidates should be responsible for doing research rather than only teaching and instructing. In the literature review, it is observed that teachers conduct research activities for different purposes. These purposes vary, such as self-development, contributing to the, instruction process (Elliot, 1991) or producing knowledge (Kemmis and McTaggart, 1992). However,

Artvinli (2010) addresses the point that teachers are viewed as the object of research: they only play the role of participant in research when instead they should also execute some research. The current situation in Turkey reveals that teachers only participate in the step of data collecting (Küçük, 2002). However, teachers are expected to design and conduct small-scale research in their teaching environment in addition to participating data collection. When it comes to following periodicals and academic publishing in educational sciences or in other areas, one study conducted by TED (2009) reveals that only 12 percent of teachers follow research about their profession. Buluş, Kırıkkaya, Bozkurt, and Öztürk (2012) found that nearly half of science and technology teachers are aware of what research is being conducted in their schools, less than half care about research results, and most do not learn the research results. Ekiz (2006) stated that most primary school teachers are willing to conduct research in order to help students learn more easily and develop their own instructional strategies and methods; however, lack of time and limited facilities create barriers to teachers who are willing to take place as an executive in research. Unfortunately, this study also reveals that most teachers judge that studies conducted by academics are not really related to the real world. Therefore, it is possible to conclude that teachers' negative views and attitudes towards research hinder the development of research qualifications of teachers and their students, too. Saracaloğlu, Varol, and Ercan (2005) relate the possibility of conducting research activities to the research qualifications and positive attitudes of individuals and institutions. In this sense, it is strongly emphasized that teachers (and teacher candidates) are expected to have the willingness and skills to conduct research, use the information and communication technologies during research, analyze the data, and share analysis results with administrators and other practitioners (MEB, 2008). The number of publications about research methods has recently increased in order to develop a sense of research awareness. Also, courses that aim to increase research qualifications take place in more educational programs. In this regard, research education has become a matter of great importance in both undergraduate and post-graduate levels. Saracoğlu et al. (2005) emphasized that the research knowledge and skills supplied to individuals fail to be adequate for conducting research. Determining whether or not a research matter is within an individual's interest, their morals, and whether or not they view this process as a threat is more crucial to the process. This study aims to analyze the research qualifications of preschool teacher candidates and their anxiety level towards research depending upon certain variables (gender, class level, scientific research methods course, and scientific research experience), as well as see whether or not a relation between research qualifications of preschool teachers and their anxiety level towards research exists. In relation to the aim of this study, we will attempt to find answers to the following research questions:

1. What are the research qualifications of preschool teacher candidates?
  - Do the research qualifications of preschool teacher candidates show a significant difference according to gender?
  - Do the research qualifications of preschool teacher candidates show a significant difference according to class level?

- Do the research qualifications of preschool teacher candidates show a significant difference according to whether or not they took a scientific research methods course?
  - Do the research qualifications of preschool teachers show a significant difference according to research experience?
2. What is the anxiety level of preschool teacher candidates towards research?
    - Does the anxiety level of preschool teacher candidates towards research show a significant difference according to gender?
    - Does the anxiety level of preschool teacher candidates towards research show a significant difference according to class level?
    - Does the anxiety level of preschool teacher candidates towards research show a significant difference according to whether or not they took a scientific research methods course?
    - Does the anxiety level of preschool teacher candidates towards research show a significant difference according to research experience?
  3. What is the relationship between research qualifications of preschool teacher candidates and their anxiety level towards research?

## **Method**

### ***Research Design***

This study aims to determine whether or not the research qualifications of preschool teacher candidates and their anxiety level towards research differ according to different variables, as well as the relationship between the research qualifications of preschool teacher candidates and their anxiety level towards research. In this study, a *correlational survey model* (a descriptive research method) is used.

### ***Research Population and Sample***

The population of this study includes preschool teacher candidates who continued their education in the department of early childhood education at Mersin University during the 2012-2013 education year. Because the population was finite and easily accessible, population sampling was not used and the study aimed to reach the whole population. The study was conducted with all preschool teacher candidates who were present during application of study at the facility. One hundred and eighty-seven teacher candidates who continued their education as freshmen, sophomores, juniors, and seniors were reached in the department of early childhood education at Mersin University; after an extreme value analysis the study was carried out with 180 teacher candidates. For detailed information about the study group, please refer to Table 1.

**Table 1.**

*The Frequency and Percentage Table of Preschool Teacher Candidates According to Their Gender, Class Level, Scientific Research Methods Course, and Scientific Research Experience.*

| Variables                          |                    | Frequency | Percentage |
|------------------------------------|--------------------|-----------|------------|
| Gender                             | Female             | 159       | 88,3       |
|                                    | Male               | 21        | 11,7       |
| Class Level                        | Freshman (1.year)  | 56        | 31,1       |
|                                    | Sophomore (2.year) | 48        | 26,7       |
|                                    | Junior (3.year)    | 33        | 18,3       |
|                                    | Senior (4.year)    | 43        | 23,9       |
| Scientific Research Methods Course | Yes                | 67        | 37,2       |
|                                    | No                 | 113       | 62,8       |
| Scientific Research Experience     | Yes                | 58        | 32,2       |
|                                    | No                 | 122       | 67,8       |

#### **Data Collection Instruments**

In this study, the "anxiety towards research scale" and the "research qualifications scale" that were developed by Büyüköztürk (1997;1999) were implemented. According to the validity and reliability results of the "anxiety towards research scale", the loading points of all items are above .55 and one factor accounts for 42 percent of total variance. Also, the reliability coefficient of the whole scale is .87; therefore, when it comes to implementation of a scale in order to determine the level of anxiety towards research, it can be assumed that the analysis will yield reliable results. The construct validity of the "research qualifications scale" was tested with principal components analysis as a factor analysis technique and the scale was found to have a single factor. This single factor accounts for 60 percent of total variance and the factor load points are between .66 and .84. The Cronbach Alpha internal consistency estimate of scale reliability is found to be .89. A validity and reliability analysis of the "anxiety towards research scale", the study group consists of education faculty undergraduate students, while the "research qualifications scale" development study was conducted with teachers who work at primary schools. Data obtained about the validity and reliability studies of both scales show that these scales are valid and reliable instruments to determine the research qualifications of teacher candidates and their level of anxiety towards research. Additionally, because study groups in the development process of the scales include teacher and teacher candidates, it can be easily argued that these scales are proper for sample groups of the study.

#### **Data Analysis**

In order to determine the research qualifications of teacher candidates and their level of anxiety towards research, arithmetic mean and standard deviation value were examined. If the mean points obtained from scales of research qualifications of teacher candidates and their level of anxiety towards research are above the central point of scales, it is accepted that the research qualifications of teacher candidates are

high and anxiety levels are low. If the mean points obtained from scales of research qualifications of teacher candidates and their level of anxiety towards research are below the central point of scales, it is accepted that the research qualifications of teacher candidates have low research qualifications and high anxiety levels. The difference of means test was implemented in order to determine whether or not research qualifications of preschool teacher candidates and their level of anxiety towards research differ according to gender, class level, taking a scientific research methods course, and scientific research experience. For this reason, whether or not the dependent variable is distributed normally at the independent variable level is examined. It has been observed that for all variables examined, research qualifications points and anxiety towards research points are distributed normally. Depending on the results of the test of normality, the t-test for unrelated samples was used in order to determine whether or not the research qualifications of teacher candidates and their level of anxiety towards research differ according to gender, class level, taking a scientific research methods course, and scientific research experience. One-way variance analysis (ANOVA) was used to determine whether or not a difference exists depending on class level of teacher candidates. The Pearson Correlation Coefficient has been calculated in order to see the relationship between research qualifications of preschool teacher candidates and their level of anxiety towards research.

### Results

Table 2 shows the arithmetic mean and standard deviation values that were used to determine the research qualifications of preschool teacher candidates and their level of anxiety towards research.

**Table 2.**

*Descriptive Statistical Results of Research Qualifications of Preschool Teachers and Their Level of Anxiety towards Research*

|                         | <i>N</i> | <i>Min.</i> | <i>Max.</i> | $\bar{X}$ | <i>SS</i> |
|-------------------------|----------|-------------|-------------|-----------|-----------|
| Research Qualifications | 180      | 11          | 35          | 22,69     | 4,56      |
| Research Anxiety        | 180      | 16          | 48          | 32,09     | 6,16      |

According to Table 2, preschool teacher candidates scored 11 at the lowest and 35 at the highest from the research qualifications scale. From the descriptive statistical results of the research qualifications scale, it is obvious that preschool teacher candidates possess the necessary research qualifications. Also, preschool teacher candidates scored 16 at the lowest and 48 at the highest from research anxiety scale.

The highest point one can get from the scale is 60 and the lowest point is 12. The mean of points teacher candidates got from the research anxiety scale is 32, 9, and the standard deviation is 6, 16. From the descriptive statistical results of research qualifications and research anxiety scale, it is obvious that preschool teacher candidates possess the necessary research qualifications and their level of anxiety towards research is low. Table 3 shows the results of a t-test for unrelated samples that were used to determine whether or not the research qualifications of preschool



teacher candidates and their level of anxiety towards research differ according to gender.

**Table 3.**

*The Results of a T-Test for Unrelated Samples That Was Used to Determine Whether or Not Research Qualifications of Preschool Teacher Candidates and Their Level of Anxiety towards Research Differ According to Gender.*

|                                | Gender | n   | $\bar{X}$ | SS   | sd  | t     | p    |
|--------------------------------|--------|-----|-----------|------|-----|-------|------|
| <b>Research Qualifications</b> | Female | 159 | 22,85     | 4,65 | 178 | 1,288 | .199 |
|                                | Male   | 21  | 21,49     | 3,68 |     |       |      |
| <b>Research Anxiety</b>        | Female | 159 | 31,96     | 6,12 | 178 | ,792  | .430 |
|                                | Male   | 21  | 33,10     | 6,56 |     |       |      |

According to Table 3, gender makes no significant difference in the research qualifications of preschool teacher candidates and their level of anxiety towards research,  $t(178)=1,288$   $p>.05$ ;  $t(178)=,792$   $p>.05$ . The findings show that gender is not a variable that makes a difference in the research qualifications of preschool teacher candidates and their level of anxiety towards research.

Table 4 shows the results of a t-test for unrelated samples that was used to determine whether or not the research qualifications of preschool teacher candidates and their level of anxiety towards research differ according to taking a scientific research methods course.

**Table 4.**

*The Results of a T-Test for Unrelated Samples that was Used to Determine Whether or Not The Research Qualifications of Preschool Teacher Candidates and Their Level of Anxiety Towards Research Differ According to Taking a Scientific Research Methods Course.*

|                                |     | n   | $\bar{X}$ | SS   | sd  | t     | p   |
|--------------------------------|-----|-----|-----------|------|-----|-------|-----|
| <b>Research Qualifications</b> | Yes | 67  | 24,92     | 4,65 | 178 | 5,452 | .00 |
|                                | No  | 113 | 21,36     | 3,96 |     |       |     |
| <b>Research Anxiety</b>        | Yes | 67  | 29,96     | 6,17 | 178 | 3,699 | .00 |
|                                | No  | 113 | 33,36     | 5,82 |     |       |     |

According to Table 3, taking a scientific research methods course makes a significant difference in the research qualifications of preschool teacher candidates and their level of anxiety towards research,  $t(178)=5,452$   $p<.05$ ;  $t(178)=3,699$   $p<.05$ . Comparing the preschool teacher candidates who took a scientific research methods course to the ones who did not, the ones who did possess higher research qualifications and lower research anxiety.

Table 5 shows the results of a t-test for unrelated samples that was used to determine whether or not the research qualifications of preschool teacher candidates and their level of anxiety towards research differ according to scientific research experience.

**Table 5.**

*The Results of a T-Test for Unrelated Samples That Was Used to Determine Whether or Not the Research Qualifications of Preschool Teacher Candidates and Their Level of Anxiety towards Research Differ According to Scientific Research Experience.*

|                       |            | N   | $\bar{X}$ | SS   | sd  | t     | p    |
|-----------------------|------------|-----|-----------|------|-----|-------|------|
| <b>Research</b>       | <b>Yes</b> | 58  | 25,26     | 3,93 | 178 | 5,636 | .00  |
| <b>Qualifications</b> | <b>No</b>  | 122 | 21,47     | 4,34 |     |       |      |
| <b>Research</b>       | <b>Yes</b> | 58  | 30,73     | 5,90 |     | 2,061 | .041 |
| <b>Anxiety</b>        | <b>No</b>  | 122 | 32,74     | 6,20 |     |       |      |

According to Table 5, the variable of scientific research experience makes a significant difference in the research qualifications of preschool teacher candidates and their level of anxiety towards research,  $t(178)=5,636$   $p<.05$ ;  $t(178)=2,061$   $p<.05$ . Comparing the preschool teacher candidates who had scientific research experience to those who did not, the ones who did possess higher research qualifications and lower research anxiety.

Tables 6 and 7 show the results of a one-way variance analysis (ANOVA) used to determine whether or not the research qualifications of preschool teacher candidates and their level of anxiety towards research differ according to the class level of preschool teacher candidates.

**Table 6.**

*The Descriptive Statistics of Research Qualifications and Research Anxiety Scale Points.*

|                 | Class Level                      | N       | $\bar{X}$ | SS   |
|-----------------|----------------------------------|---------|-----------|------|
| <b>Research</b> | Freshman (1 <sup>st</sup> year)  | 22,72   | 3,86      | ,51  |
|                 | Sophomore (2 <sup>nd</sup> year) | 22,12   | 4,59      | ,66  |
|                 | Senior (3 <sup>rd</sup> year)    | 20,03   | 4,22      | ,73  |
|                 | Junior (4 <sup>th</sup> year)    | 25,33   | 4,35      | ,66  |
| <b>Research</b> | Freshman (1 <sup>st</sup> year)  | 32,1468 | 6,49347   | ,86  |
|                 | Sophomore (2 <sup>nd</sup> year) | 30,6302 | 5,37800   | ,77  |
|                 | Senior (3 <sup>rd</sup> year)    | 34,5638 | 6,00614   | 1,04 |
|                 | Junior (4 <sup>th</sup> year)    | 31,7850 | 6,29354   | ,95  |

**Table7.**

*The research qualifications of preschool teacher candidates and their level of anxiety towards research according to their class level -the results of a one-way variance analysis (ANOVA).*

| Source of variance | Sum of squares | Sd  | Mean of squares | F      | p    |
|--------------------|----------------|-----|-----------------|--------|------|
| Intergroup         | 547,292        | 3   | 182,431         | 10,095 | ,000 |
| Intragroup         | 3180,457       | 176 | 18,071          |        |      |
| Sum                | 3727,749       | 179 |                 |        |      |
| Intergroup         | 308,410        | 3   | 102,803         | 2,785  | ,042 |
| Intragroup         | 6496,383       | 176 | 36,911          |        |      |
| Sum                | 6804,794       | 179 |                 |        |      |

According to Tables 6 and 7, the class level variable makes a significant difference in the research qualifications of preschool teacher candidates and their level of anxiety towards research,  $F(3, 176)=10,095$   $p<.05$ ;  $F(3, 176)=2,785$   $p<.05$ . The LSD test (a post hoc test) was used to determine the significant difference between the groups. According to these results, preschool teacher candidates who are in their 4<sup>th</sup> year of study possess more research qualifications than teacher candidates in other class levels. Teacher candidates who are in their 3<sup>rd</sup> year of study possess the lowest research anxiety. There is a negative significant correlation between points obtained from research qualifications scale and research anxiety scales ( $r=-,365$ ,  $p<.05$ ).

### Discussion and Conclusions

Knowledge going out of date at a fast pace and being renewed at even higher rates makes it necessary for individuals to possess research skills. Accordingly, in the Turkish education system learners are provided with research experience that involves asking questions, collecting data for a solution to the problem, analyzing, interpreting the data, and sharing opportunities. Also, teachers with a research identity become a model for learners. Therefore, today's teacher candidates should have a research identity and positive attitudes towards research. However, Kucuk (2002) states that teachers only take part in the process of data collection in general. However, not only should they participate in data collection process but also they should design research at their classrooms are emphasized by Kucuk (2002). Artvinli (2010) also emphasizes the role of teacher as researcher. Moreover, most of primary school teachers are willing to research in order to develop instructional methods and techniques but not having enough time and resource for research are stated to be an obstacle by the primary school teachers are emphasized also (Ekiz, 2006). In contrast to such findings, this study indicates that preschool teacher candidates possess high research qualifications and a low level of anxiety towards research. According to Korkmaz, Sahin and Yesil (2011), teachers have enough knowledge and skill about research process. With this result in mind, university instructors should involve undergraduates in research activities and teach them how to conduct research. Higher education institutions should create a learning environment for undergraduates through their research applications and make the research process easier for undergraduates. Currently, lifelong learning aims to improve individuals' access to knowledge and this requires raising individuals with research qualifications who take responsibility to obtain knowledge. At higher education institutions teacher candidates should graduate with research qualifications and they should serve as role models for other students. It is thought that research qualifications are successfully acquired at higher education institutions. Also, teacher candidates who have the opportunity to observe instructors with research skills, take part in research activities, and enjoy this process possess low levels of anxiety towards research. Shortly, prospective teachers' high research competency and low research anxiety can be explained through the instructors with research competency and research oriented instruction at teacher training institutions.

Gender makes no significant difference in research qualifications of preschool teacher candidates and their level of anxiety towards research is concluded; this is probably because male and female teacher candidates take part in the same learning environments and therefore have similar qualifications and affective behaviors. The

research process involves many steps and gender has no significant effect on learning the steps of this process. This situation shows that preschool teacher candidates have positive attitudes towards the research process regardless of gender. Similarly, Yavuz Konokman, Tanriseven and Karasolak (2013) emphasize gender isn't a factor leading to statistical difference in the prospective teachers' attitudes towards educational research. Also, teachers' research competency doesn't differ regarding gender (Korkmaz, Sahin and Yesil, 2011) is the finding correlated with the results of the studies above.

When analyzed at class level, preschool teacher candidates who are in their 4th year of study possess the highest research qualifications and fairly low research anxiety. This is possible because these students spend more time in study and research environments than students in other levels. Fourth year undergraduates have more advantages thanks to their adaptation, orientation to the university, and placement in more studies, which may be the reason why they have high research qualifications. In terms of research anxiety, undergraduates in their 3rd year of study possess the highest level of anxiety towards research, and 2nd year undergraduates possess the lowest level of anxiety. As undergraduates get closer to graduation they may begin to feel insufficient and therefore have the highest research anxiety. A scientific research methods course is provided in the last year of the educational program in early childhood education and anxiety levels of research decrease with this course.

Preschool teacher candidates who took a scientific research methods course possess higher research qualifications and lower research anxiety than those who did not take the course. In the 4th year of study a scientific research methods course and a research project course are supplied. These courses aim to help improve the scientific strength of undergraduates, design scientific research that examines problems encountered in educational environments, and conduct research. The definition of research, the research process, and research qualifications are successfully taught in these courses. The effect of scientific research method course and prior research experiences on attitudes towards research are focused in a variety of studies (Saracaloglu, 2008; Saracaloglu, Varol and Ercan, 2005; Lei, 2008). These studies indicate that prospective teachers having the scientific research method course have more positive attitudes towards research. Because scientific research method course give chance to the prospective teachers to take part in research process frequently. Based on the results of such studies, "Scientific Research Method" course is integrated into the curriculum of teacher training institutions.

Preschool teacher candidates who had scientific research experience possess higher research qualifications and lower research anxiety than those who did not. Also, Yavuz Konokman (2015) states that preschool teacher candidates' resistance behaviors towards research are possible to be decreased via inquiry based learning activities. It is added that preschool teacher candidates having been resistant to research before because of the factors such as instructors' incompetency, their negative feelings about research, faulty instruction, etc. become willing to making research after they has experienced in research during a semester (Yavuz Konokman, 2015). Moreover, the positive changes in the second year teacher candidates' beliefs and attitudes regarding research occur during an introductory course on research at an institute for primary teacher education (Van Der Linden, Bakx, Ros, Beijgaard and Van Den Bergh, 2015). Therefore, it can be inferred that scientific research experience

gives undergraduates the opportunity to learn how a research process occurs by doing it practically. Even when an undergraduate takes a scientific research methods course, s/he may have difficulty in putting it into practice. A research project course provided in the 4th year aims to have preschool teacher candidates show their theoretical knowledge in practice. Teacher candidates have the ability to state a problem situation, develop a research project, collect data about a problem, analyze data, and reach solutions and results. Individuals who graduate from an early childhood education program should be aware of the scientific research process, be able to use this process in an effective way, and therefore gain benefits from things like a literature review of their area of study, sharing results, finding a solution to a problem, and contributing to knowledge production and literature. Similarly, research experience is a variable leading to statistical difference in research attitude is proven in the studies (Bennett, 1994; Saracaloglu, 2008; Saracaloglu, Varol and Ercan, 2005; Tavsancil, 1995; Walker and Cousins, 1994). The results of these studies indicate the participants having prior research experience has more positive attitude towards research than the others inexperienced.

Instructors who of these courses should identify the current knowledge of undergraduates about what they are about to learn and then attempt to correct the students' misconceptions about research. In the literature review, there exists a very limited number of studies about research qualifications and research anxiety. Therefore, a variety of studies can be conducted related to conceptions about research, research qualifications, and exposed student misconceptions. A positive correlation is found between research qualifications, research experience, and taking a scientific research methods course. A scientific research methods course is suggested to take place in the 1st year of the early childhood education program, which may make a positive contribution to the research anxiety of undergraduates. Also, for research experience, undergraduates should be given more opportunities to take part in research environments, spend more time there, have easy access to the necessary materials, and be given guidance. A positive research environment plays an important role in students having positive affective attitudes and gaining a research identity. Also, undergraduates should be supplied with previous research project samples in order to examine them in detail, which would probably decrease their anxiety and apprehension levels. Lastly, it is a good idea for undergraduates to create a web portal about their own authentic research projects.

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## Okulöncesi Öğretmen Adaylarının Araştırma Yeterlikleri ve Araştırmaya Karşı Kaygı Düzeyleri

### Atf:

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### Özet

#### Problem Durumu

Üniversitelerin araştırma yaparak bilim ve toplumsal gelişmelere katkıda bulunma işlevine sahip olması nedeniyle üniversitelerin araştırmacı kimliğe sahip bireyler yetiştirmedeki rolü yadsınamaz. Toy ve Tosunoğlu (2007) toplumun ve bilimin ilerlemesinde araştırmaların doğru, güvenilir ve hatasız olması gerektiğini vurgulayarak, güvenilir olmayan çalışmaların bilimin ve insanlığın gelişimini olumsuz etkileyeceğini vurgulamaktadır. Dolayısıyla bilimin ve teknolojinin ilerlemesi için doğru ve güvenilir araştırmaların yapılmasına ve bu araştırmaları yapabilen bireylere ihtiyaç duyulmaktadır. Güvenilir ve doğru araştırmaların yapılması bireyin sahip olduğu araştırma yeterlilikleriyle ilişkilendirilebilir. Eğitim sisteminin araştırmacı, bilimsel tutum ve davranışlara sahip bireyler yetiştirme amacı dikkate alındığında, öğretmenlerin araştırmaya ilişkin olumlu duyuşsal özelliklere ve araştırma yeterliliklerine sahip olması önem taşımaktadır. Auger ve Wideman (2000) öğretmenlerin araştırmacı kimlik kazanmalarının ve araştırma yapmaya ilişkin olumlu tutuma sahip olmalarının önemli olduğunu belirtmektedir. Stenhouse (1975; 1985) öğretmenin öğretimi gerçekleştirme rolünün ötesinde araştırma yapma rolünü üstlenmesi gerektiğini vurgulamaktadır. Alan yazın incelendiğinde öğretmenlerin farklı amaçlar doğrultusunda araştırma etkinlikleri gerçekleştirdikleri gözlenmektedir. Bu amaçların kendini geliştirme, öğretim süreçlerine katkıda bulunma (Elliot, 1991) ya da bilgi üretme (Kemmis ve McTaggart, 1992) olduğu görülmektedir. Ancak Artvinli (2010) öğretmenlerin araştırmanın nesnesi olarak görüldüğünü belirterek, öğretmenlerin sadece araştırmanın uygulandığı değil, araştırmayı uygulayan kişi olması gerektiğine değinmektedir. Ancak Küçük (2002) Türkiye'deki öğretmenlerin sadece araştırmaların veri toplama aşamasında yer aldığını vurgulamaktadır. Oysaki öğretmenlerden veri toplama aşamasına katılmanın yanı sıra kendi sınıf ortamlarında küçük çaplı araştırmalar tasarlayabilmeleri ve uygulayabilmeleri beklenmektedir. Buluş Kırıkkaya, Bozkurt ve Öztürk (2012) fen ve teknoloji öğretmenlerinin yaklaşık yarısının okullarında yapılan eğitim araştırmalarından haberdar olduklarını, bir kısmının araştırma sonuçlarını önemstediklerini ancak çoğunun araştırma sonuçlarından haberdar olmadıklarını belirtmektedir. Ekiz (2006) ilköğretim öğretmenlerinin çoğunun öğrencilerin daha kolay öğrenmelerini sağlayabilmek ve öğretim yöntem ve tekniklerini geliştirmek için araştırma yapmak istediklerini, olanak ve zaman yetersizliğinin öğretmenlerin araştırma yapmaya yönelmesinde engelleyici rol oynadığını belirtmiştir. Ayrıca çoğu öğretmenin akademisyenler tarafından yapılan araştırmaların gerçek dünyayla ilişkili olmadığını düşündükleri görülmüştür. Öğretmenlerin araştırmaya ilişkin



olumsuz algılarının, araştırma bilincine sahip bireyler yetiştirilmesini ve öğretmenlerin araştırma yeterliliklerinin gelişmesini engellediği düşünülebilir. Saracaloğlu, Varol ve Ercan (2005) araştırma etkinliklerinin gerçekleştirilmesinin araştırmayı yapacak birey ve kurumların araştırma yeterliklerine ve olumlu tutumlara sahip olmalarıyla ilişkilendirmektedir. Bu bağlamda öğretmenlerin araştırma yapmaya istekli olmaları, bilimsel araştırmalar yapabilmeleri, bilimsel araştırma yaparken bilgi ve iletişim teknolojilerini kullanabilmeleri, veri analiz edebilmeleri ve analiz sonuçlarını yöneticiler ve diğer eğitimcilerle paylaşabilmeleri gerektiğine değinilmiştir (MEB, 2008). Saracaloğlu ve diğerleri (2005) de bireye kazandırılan araştırma bilgi ve becerilerin bireyin araştırma yapılabilmesi için yeterli olmadığını; bireyin bu alana yönelik ilgisinin, sahip olduğu değerlerinin ve bu süreci kendisi için bir tehdit unsuru olarak görüp görmemesinin bireyin araştırma yapmasında etkili olduğunu vurgulamaktadır.

#### *Araştırmanın Amacı*

Bu çalışmada öğretmen adaylarının araştırma yeterliliklerinin ve araştırmaya ilişkin kaygı düzeylerinin çeşitli değişkenlere (cinsiyet, sınıf düzeyi, bilimsel araştırma teknikleri dersi alma durumu ve bilimsel araştırma deneyimi) göre belirlenmesi ve kaygı düzeyi ile araştırma yeterlilikleri arasındaki ilişkinin saptanması amaçlanmıştır.

#### *Araştırmanın Yöntemi*

Araştırmanın amacı doğrultusunda çalışmada ilişkisel tarama modeli kullanılmıştır. Çalışmanın evrenini 2012-2013 öğretim yılında Mersin Üniversitesi Eğitim Fakültesi Okul Öncesi Öğretmenliği Programında öğrenimine devam eden öğretmen adayları oluşturmaktadır. Evrenin sınırlı ve kolay ulaşılabilir olması nedeniyle evrenden örneklem belirleme yöntemi kullanılmamış olup, evrenin tamamına ulaşılması amaçlanmış ve uygulamanın yapıldığı sürede kurumda bulunan Okul Öncesi Öğretmenliği Programı 1., 2., 3.ve 4. sınıfta öğrenim gören tüm okul öncesi öğretmen adaylarıyla çalışma gerçekleştirilmiştir. Çalışmanın verileri kodlama aşamasında olup, SPSS 17 programıyla analiz edilmesi sonucunda yapılacak uç değer analizlerine göre örneklemin sayısı ve araştırmanın değişkenlerine göre örnekleme ilişkin bilgiler sunulacaktır. Çalışmada Büyüköztürk (1997; 1999) tarafından geliştirilen "Araştırmaya Yönelik Kaygı Ölçeği" ile "Araştırma Yeterlikleri Ölçeği" kullanılmıştır. Öğretmen adaylarının araştırma yeterliliklerinin ve araştırmaya ilişkin kaygı düzeylerinin belirlenmesinde betimsel istatistiklerden yararlanılmıştır. Okul öncesi öğretmeni adaylarının araştırma yeterliliklerinin ve araştırmaya ilişkin kaygı düzeylerinin cinsiyete, bilimsel araştırma teknikleri dersi alma durumuna ve bilimsel araştırma deneyimine göre farklılık gösterip göstermediğinin belirlenmesinde ilişkisiz örneklem için t-test; sınıf düzeyine göre farklılaşp farklılaşmadığının belirlenmesinde tek yönlü varyans analizi gerçekleştirilmiştir. Öğretmen adaylarının araştırmaya ilişkin kaygı düzeyleri ile araştırma yeterlilikleri arasındaki ilişkinin saptanmasında Pearson korelasyon katsayısı hesaplanmıştır.

#### *Araştırmanın Bulguları*

Çalışmada okul öncesi öğretmeni adaylarının araştırma yeterliliklerine sahip oldukları ve genel olarak araştırmaya ilişkin kaygı duymadıkları saptanmıştır.

Üniversitelerin araştırma işlevine sahip olması nedeniyle üniversitede görev yapan öğretim elemanlarının araştırmacı kimliğe sahip oldukları ve derslerinde öğrencilerin araştırma etkinliklerine katılmalarını sağladıkları düşünülmektedir. Bu durumda yükseköğretim kurumlarında araştırma uygulamalarıyla bireylerin araştırma becerileri kazandırılmasının kolaylaştığı ileri sürülebilir.

#### *Araştırmanın Sonuçları ve Önerileri*

Özellikle günümüzde yaşam boyu öğrenmenin popüler olması araştırmacı ve kendi öğrenme sorumluluğunu üstlenen bireylerin yetiştirilmesi ihtiyacını doğurmuştur. Bu ihtiyacın giderilmesinde öğretmen yetiştiren eğitim kurumlarında öğrenim gören öğretmen adaylarının araştırma yeterliliklerine sahip olması ve öğrencileri için model olmaları önemlidir. Araştırmanın bulguları dikkate alındığında öğretmen yetiştiren eğitim kurumlarındaki öğrenme ortamlarında araştırma yeterliklerinin kazandırıldığı ifade edilebilir. Ayrıca araştırmacı kimliğe sahip öğretim elemanlarını gözlemlene şansı bulan ve araştırma etkinliklerinde yer alarak bu etkinliklere ilişkin olumlu duyuşsal özelliklere sahip olan öğretmen adaylarının araştırmaya ilişkin kaygı duymadıkları düşünülebilir. Araştırmada cinsiyetin öğretmen adaylarının araştırmaya yönelik kaygı ve araştırma yeterlilikleri düzeyinde farklılaşma yaratan bir değişken olmadığı saptanmıştır. Ancak sınıf düzeyinin, bilimsel araştırma teknikleri dersi alma durumunun ve bilimsel araştırma deneyiminin öğretmen adaylarının kaygı düzeylerinde ve araştırma yeterliliklerinde farklılaşmaya neden olduğu söylenebilir. Ayrıca araştırmaya yönelik kaygı düzeyi ile araştırma yeterlilikleri arasında negatif yönde korelasyon bulunmuştur. Bu durumda araştırmaya ilişkin olumsuz duyuşsal özelliklerin araştırma yeterliliğinin kazanılmasını etkileyebileceği düşünülmelidir. Araştırma yeterlikleriyle donanık bireyler yetiştirmek için öncelikle araştırma yeterliklerinin kazanılmasını engelleyen araştırmaya yönelik kaygı düzeyinin belirlenmesi ve gözlenen yüksek kaygının en aza indirgenmesi için önlemlerin alınması gereklidir. Ayrıca öğretmen adaylarının araştırma kaygılarını etkileyen değişkenler belirlenerek yapısal eşitlik modellemesiyle kaygıya etki eden değişkenler test edilebilir. Böylece bu değişkenlerin ortadan kaldırılmasına yönelik öğretim elemanlarının görüşlerinin alındığı nitel çalışmalar yürütülebilir.

*Anahtar Kelimeler:* Araştırma yeterliği, araştırma kaygısı