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Lisans Eğitiminde Akran Araştırma Danışmanlığı Deneyimi: Nitel Bir Durum Çalışması*

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Makale Bilgisi	ÖZET
Geliş Tarihi: 05.09.2019 *Kabul Tarihi*: 21.02.2021 *Erken Görünüm Tarihi*: 03.03.2021 *Basım Tarihi*: 30.04.2022	Bu çalışmanın amacı, lisans düzeyinde verilen Araştırma Yöntemleri dersinde uygulanan Akran Araştırma Danışmanlığı Programı'nda okul psikolojik danışmanı adaylarının akran araştırma danışmanlığı deneyiminin incelenmesidir. Çalışmada durum çalışması yöntemi kullanılmıştır ve ölçüt örnekleme kullanılarak Kuzey Kıbrıs Türk Cumhuriyeti'nde uluslararası bir üniversitede yürütülen Araştırma Yöntemleri dersini tamamlamış olan 10 okul psikolojik danışmanı adayı akran araştırma danışmanı olarak belirlenmiştir. Akran araştırma danışmanları, dersi almakta olan okul psikolojik danışmanı adayları ile eşleştirilmiştir. İlgili eğitim modülünü tamamlayan akran araştırma danışmanları, akranlarına etkili bir araştırma önerisi yazma konusunda rehberlik etmişlerdir. 10 akran araştırma danışmanı ve 9 danışandan nitel anketler aracılığıyla veri elde edilmiştir. Veri, içerik analizine tabi tutulmuştur. Araştırma sonuçları, akran danışmanlığı sürecinin, akran danışmanlarının, ilk elden araştırma danışmanlığı deneyimi elde etmelerine katkı sağladığını; araştırma yürütme konusundaki bilgi ve becerilerini güncellediğini; araştırma öz-yeterliklerini ve ilgilerini arttırdığını ve iletişim becerilerini geliştirdiğini ortaya koymaktadır. **Anahtar Sözcükler:** Akran araştırma danışmanlığı, akran danışmanlığı deneyimi, lisans düzeyi araştırma yöntemleri dersi, durum çalışması

Capturing Peer Research Mentoring Experience in Undergraduate Education: A Qualitative Case Study

Article Information	ABSTRACT
Received: 05.09.2019 *Accepted*: 21.02.2021 *Online First*: 03.03.2021 *Published*: 30.04.2022	The purpose of this study was to capture the peer research mentoring experience of pre-service school counselors who were involved in a Peer Research Mentoring Program deployed at an undergraduate level Research Methods course. We used a qualitative case study and employed criterion sampling to recruit 10 pre-service school counselors who had completed the Research Methods course at an international university in Northern Cyprus as research mentors. We paired up the research mentors with pre-service school counselors who were enrolled in the course. Upon completion of a training module, the peer research mentors guided their peers in developing an effective research proposal. We collected data through qualitative surveys from 10 peer research mentors and 9 mentees. Data were subjected to content analysis. The results indicated that the peer research mentoring process enabled the research mentors to gain first-hand research mentoring experience; updated their knowledge and skills regarding conducting research; increased their research self-efficacy and research interests, and improved their communication skills. **Keywords:** Peer research mentoring, peer mentoring experience, undergraduate level research methods course, case study

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1. INTRODUCTION

Developing research skills of undergraduate students in higher education has been accepted as the real gain and contribution to the students that a research university or any institution can sustain (Katkin, 2003). A three-year study about undergraduate research experience revealed various benefits of developing research competence, including better preparation for a future career, more positive perception about learning and working as a researcher, boost in self-confidence in research skills, feeling more like a scientist, and establishing collegial relationships with faculty mentors and peers (Seymour, Hunter, Laursen, & DeAntoni, 2004). Similarly, Kardash (2000) investigated the effect of undergraduate research experience on undergraduate students' research skills such as producing research hypotheses, collecting and analyzing data. Self-reports and faculty mentors' ratings revealed that this research experience improved the research skills of undergraduate students. Moreover, after testing the outcomes of an undergraduate research experience program, Bauer and Bennett (2003) emphasized that undergraduate research programs with the direct participation of undergraduate students in ongoing research should be developed and encouraged in universities. In light of the past research, undergraduate research experience brings along many benefits like research skills development (Devi, Abraham, Adiga, Ramnayaran, & Kamath, 2010; Lopatto, 2010), career clarification and motivation for postgraduate studies (Craney, McKay, Mazzeo, Morris, Prigodich, & De Groot, 2011; Guterman, 2007; Hathaway, Nagda, & Gregerman, 2002), capitalized social network with better communication (Mekolichick & Gibbs, 2012), increased academic success (Leidenfrost, Strassnig, Schabmann, Spiel, & Carbon, 2011), improvement in critical thinking skills (Seymour et al., 2004), and learning problem-solving skills (Pierrakos, Zilberberg, & Anderson, 2010).

Regardless of students' majors, developing research skills puts a premium on each undergraduate student. This is valid for teacher candidates as well because undergraduate research skill development enables individuals to implement their undergraduate knowledge into real-world issues (Seymour et al., 2004). For instance, at least a graduate teacher should be able to conduct classroom research or action research in his classroom to improve the teaching and learning process, and required skills should be acquired during pre-service years (Odhiambo, 2010). Within this scope, Lovat, Davies, and Plotnikoff (1995) stated that teacher educators need to address the importance of embedding ways to improve pre-service teachers' research skills so that researcher teachers can come out with a greater contribution to their future students. This highlights the utmost importance of touching upon the research skills development of pre-service teachers.

Developing research skills of prospective school counselors is of great importance as well in their professional development. Research skill development is one of the basic skills that psychological counselors are expected to acquire so as to conduct scientific investigations (American Psychological Association, n.d.). School counselors' use of research-based strategies is considered the key to increasing students' social and academic performance (Webb, Brigman, & Campell, 2005). However, school counselors initially must have high research motivation to go over the literature to build a bridge between research-based suggestions and practice; need to carry out research with scholars in the related field to produce more generalizable research findings, and need to have basic testing and assessment skills to see the effectiveness of their interventions (Brigman, 2006). Research skills of psychological counselors were investigated in few studies, such as on research skills development, research self-efficacy, and mentoring experiences (Hollingsworth & Fassinger, 2002; Royalty & Reising, 1986). Not only students in graduate education but also school counselors working in the field are expected to effectively use data and research to test the effectiveness of their interventions (Mason et al., 2016). Hence, it can be said that acquiring research skills in undergraduate education is crucial. However, to the best knowledge, there seems to be a gap in the literature about research skills and research interests of pre-service school counselors compared to the graduate-level ones.

In faculties of education, pre-service teachers mostly learn research skills through research courses and preparing research projects with tutorial support (Waite & Davis, 2006). This undergraduate research experience generally includes planning a study, making observations, and preparing and analyzing data (Linn, Palmer, Baranger, Gerard, & Stone, 2015). With its content, research courses become more of an issue for educators by providing skills of applied research in connection with classroom practices and by making educators become critical consumers of related literature (Cipani, 2009). Universities have been seeking ways to advance the learning outcomes of research methods courses rather than just using traditional teaching and learning methods in instruction. For instance, including additional training like information literacy training (Platt & Platt, 2013), active learning with group discussions (Linneman, 2019), undergraduate research experience with active discovery (Pierrakos et al., 2010), and getting support from peer mentors (Balster et al., 2010) are some active learning implications used in undergraduate research methods courses. Benefits of these such active methods include research skill development, increased competency for graduate education, and improved academic performance (Balch, 2014; Hunter, Laursen, & Seymour, 2007).

One acknowledged way to support learning outcomes of traditional courses is peer mentoring programs (Bierema & Merriam, 2002). These programs involve a more skillful student to help a less experienced fellow one so that both mentor and fellow student can develop their experiences and individual growth (Rosenkranz, 2012). According to Council on Undergraduate Research (2012), it is very functional to embed research-like experiences into research courses in undergraduate education, particularly with peer mentoring, to support learning, explore research and academic disciplines, and create student researchers. This process is basically important because it promotes dedication to gaining more academic experience throughout research mentoring (Astin, Alexander, Wogelgesang, Ikeda, & Yee, 2000; Colvin & Ashman, 2010). Indeed, in a meta-analytic study, Beltman and Schaeben (2012) classified the benefits of undergraduate peer mentoring programs under the

groups of cognitive, altruistic, personal growth, and social growth such as increased confidence, pride for transferring their knowledge, improved social and interpersonal skills and so on. Positive impacts of mentoring programs have been reported in other studies as well (Fox, Stevenson, Connelly, Duff, & Dunlop, 2010; Hughes & Fahy, 2009). Consequently, peer research programs possess great importance and have been increasingly used in undergraduate education.

As mentioned earlier, undergraduate research opportunities allow students many benefits like enhancement in research skills, increased self-efficacy, motivation for postgraduate study, and enthusiasm for scientific discovery. Similar to other academic programs, research self-efficacy is an important issue in the school counseling program as well. Research self-efficacy is defined as "the degree to which an individual believes she or he has the ability to complete various research tasks (e.g., conceptualization, analysis, writing)" (Bieschke, Bishop, & Garcia 1996, p. 60). Undergraduate research experience was already found to increase the level of research self-efficacy that encourages students to pursue research careers (Adedokun, Bessenbacher, Parker, Kirkham, & Burgess, 2013). Considering the importance of research experience in promoting research self-efficacy (Black et al., 2013; Love, Bahner, Jones, & Nilsson, 2007), providing productive first-hand research experience seems to be crucial for enhancing students' research self-efficacy and their motivation for future research career in return.

Specific to research skills development in undergraduate education, peer mentors in peer mentoring programs also play a key role in producing better and more meaningful research experiences (Edgcomb, Crowe, Rice, Morris, Wolffe, & McConnaughay, 2010). As Balster, Pfund, Rediske, and Branchaw (2010) emphasized, peer research mentors are the facilitators of undergraduate research courses that contribute to research skills development and course learning outcomes. Overall, a review study of earlier peer mentoring programs summarizes that these programs generate several functions including academic support, role modeling, clarification of career and improved success (Gershenfeld, 2014).

In general, peer mentoring programs are designed to reach the goals of enhancing academic achievement and university retention, to assist career planning, to provide psychosocial and emotional support (Nora & Crisp, 2007), and to contribute to undergraduate students' research skills development that are accepted as necessary skills to face with demands of 21st century (Richards, Powell, Hammack, McMullen, Bacnik, Lewis, & Sams, 2014). One option to reach these goals and demonstrated benefits is peer group mentoring in which upperclassmen undergraduate students mentor a group of underclassmen students. In other words, research mentoring programs work by the guidance of a more experienced and knowledgeable peer research mentor to a less experienced mentee throughout meetings, discussions, and feedbacks (Levesley, Francis, Castanheira, Hobson, & Church, 2015). Although these programs are mainly developed for the purpose of research skills development like writing skills and better understanding of academic publications, they also bring out personal (academic career pursuit, personal satisfaction, improved self-efficacy) and institutional outcomes (retention, high-quality research outputs) (Levesley et al., 2015). Furthermore, this is a preferable option since students report feeling comfortable while asking questions and consulting a research mentor of similar age (Richards et al., 2014). As a result, peer research mentoring programs come with various advantages, but more research should be conducted to test the outcomes and improve the quality of these programs because research findings lead the way for development and enduring enhancements in any undergraduate mentoring programs (Gershenfeld, 2014).

In spite of all these proven benefits and implications, to our knowledge, no study has tested the effects of any peer research mentoring program in a faculty of education in Turkey, especially for pre-service school counselors who are in high need of having competent research skills. With this in mind, the purpose of this study is to capture the peer mentoring experiences of undergraduate students who were assigned as peer research mentors in the study. Here, it is essential to provide background information about the research methods courses in Turkey and Northern Cyprus. In 2018, the Higher Education Council in Turkey has made some changes in Teacher Education Programs. Research Methods in Education (with 2 local and 3 ECTS credits) has been added as a must course in almost all programs at the undergraduate education level. However, in some faculties, the course is included in the teacher education programs in elective status. In the new Guidance and Psychological Counseling Program and other teacher education programs (Higher Education Council, 2018), the Research Methods course is stated to have the following course content: Basics of research methods; processes for conducting research (stating research problem, study sample, data collection, analysis, reporting results); aspects of measurement tools; analyzing and interpreting data; accessing thesis, articles, and databases; presenting types of research designs; basic paradigms in scientific research; sampling in quantitative and qualitative research; validity and reliability in research; reviewing, evaluating, and presenting theses or articles; writing a research report; ethics in research; and action research in educational settings.

Knowledge and skills obtained from research methods courses are fundamental to undergraduate education (Bachiochi et al., 2011). Although many factors might intervene in the educational attainments of these courses in social sciences, such as lack of confidence, anxiety, and learning approach (Markle, 2016), the focus should be on integrating new methods in these courses to deal with these intervening factors like peer mentoring (Murphy, 2015). Moreover, the inclusion of research methods courses in undergraduate education has several benefits e.g., research skill development, better academic achievement, communication and critical thinking skills (Craney et al., 2011; Devi et al., 2010; Leidenfrost et al., 2011; Lopatto, 2010; Mekolichick & Gibbs, 2012), it becomes much more critical to maximize the learning outcomes of the research courses through effective interventions like peer research mentoring programs. More tremendous efforts are needed to ensure that course outcomes are maximized in this limited time period. Peer research mentoring program is one way to enhance active student participation at the undergraduate level with discussed benefits and to accomplish the learning outcomes of the Research Methods in Education

course. Considering this, we believe that understanding the experiences of undergraduate level peer research mentors in peer research mentoring programs is of crucial importance to increase the quality of the teaching-learning process in the course. With an aim to capture peer research mentoring experience in undergraduate education, in this study, we aim to answer the following research questions:

1. What do peer research mentors perceive as important for the peer research mentoring program?
2. What contributes to peer research mentors' experiences of peer research mentoring?
3. What restricts peer research mentors' experiences of peer research mentoring?

2. METHODOLOGY

A qualitative case study was used in the study. As explained by Fraenkel, Wallen, and Hyun (2018), a case might be an individual, classroom, school, event, activity, or an ongoing process. In this study, the case was the Peer Research Mentoring Program. This study employs a single case holistic design as discussed by Yin (2014) to dig into the phenomenon of peer research mentoring experiences in undergraduate education.

2.1. Participants

The sample consisted of 10 peer research mentors (seven females and three males) and 9 mentees (seven females and two males) who were enrolled in the Guidance and Psychological Counseling Program at an international university in Northern Cyprus. Table 1 shows the demographics of the research mentors. Criterion sampling among purposive sampling techniques was used to recruit the research mentors who are the focus group in the study. Initially, 13 peer research mentors who had taken the Research Methods course previously were assigned as peer research mentors in the Peer Research Mentoring Program. The research mentors were paired up with pre-service school counselors who were enrolled in the course. Later, three of them were excluded because they did not participate in the second data collection phase. As Table 1 shows, 10 peer research mentors participated in the study. Their cumulative grade point average (CGPA) ranged between 2.5 and 3.64. All the mentors received a satisfactory grade for the Research Methods in Education course. Around 40 students were taking the Research Methods in Education course when the study was conducted. Among those students, nine students (7 females and 2 males) volunteered to participate in follow-up qualitative surveys in the study (Table 2). Their CGPA ranged between 2.42 and 3.65. All the mentees received a satisfactory grade for the Research Methods in Education course.

Table 1.
Demographic Profiles for the Peer Research Mentors (n=10)

Pseudonyms	Gender	CGPA[1]	RM Grade[2]
PRM1	Female	3	A
PRM2	Female	3	B
PRM3	Male	4	A
PRM4	Female	3	A
PRM5	Male	2	B
PRM6	Female	2	A
PRM7	Female	2	B
PRM8	Male	3	B
PRM9	Female	1	B
PRM10	Female	3	A

Note. [1]CGPA: CGPA ranges were used instead of the actual CGPA of the students to ensure the confidentiality of the mentors. The ranges were as follows: 1=2.5-2.75; 2=2.75-3; 3=3-3.25; 4=3.25 and above. [2]RM Grade = Grade for Research Methods in Education Course. Only the first part of the letter grades was used to ensure the confidentiality of the mentors.

Table 2.
Demographic Profiles for the Mentees (n=9)

Pseudonyms	Gender	CGPA[1]	RM Grade[2]
Mentee 1	Female	3	B
Mentee 2	Female	3	A
Mentee 3	Female	3	B
Mentee 4	Female	4	A
Mentee 5	Female	1	B
Mentee 6	Female	1	B
Mentee 7	Male	1	B
Mentee 8	Male	1	B
Mentee 9	Female	4	A

Note. [1]CGPA: CGPA ranges were used instead of the actual CGPA of the students to ensure the confidentiality of the mentors. The ranges were as follows: 1=2.50-2.75; 2=2.75-3; 3=3-3.25; 4=3.25 and above. [2]RM Grade = Grade for Research Methods in Education Course. Only the first part of the letter grades was used to ensure the confidentiality of the mentors.

2.2. Instruments

The data were collected through qualitative surveys. Three sets of surveys were developed by the researchers in the light of the related literature and research questions: two for the research mentors (administered prior to and after the Peer Research Mentoring Program) and one for the mentees (administered after the Program). The first survey administered to the mentors consisted of demographic questions like GPA and gender along with open-ended questions about the reasons why they would like to be a mentor and their interest in research. The second survey included questions on the process of mentoring, reflections on mentors' experiences, contributions of the mentoring process to the mentors, the problems the mentors faced during the Peer Research Mentoring Program, and how the mentors dealt with these problems. The qualitative survey developed for the mentees also included questions about the demographics of the participants, the Peer Research Mentoring process, contributions of the Program to the mentees, and perceived impact of the program on the mentors' interests. After the surveys were developed, expert opinion on them was gathered from two faculty members: one professor who has expertise in measurement and evaluation and one professor with expertise in curriculum and instruction. In addition, two students who took the Research Methods in Education course were asked their opinions about the survey items. The surveys were revised according to the feedback obtained from the faculty members and students. Then, a google form was created for each survey.

2.3. Context

The Peer Research Mentoring Program was one of the new applications designed to achieve the learning outcomes of the Research Methods in Education course for both students who had taken the course and students who were currently taking the course during the 2016-2017 Spring semester at an international university in Northern Cyprus. With this application, students who had previously taken the course "Research Methods in Education" in the Guidance and Psychological Counseling Program were assigned as peer mentors and paired up with pre-service school counselors who were currently enrolled in the course. Upon completion of a training module, peer research mentors guided their peers in developing an effective research proposal, which was one of the major requirements of the course.

2.4. Procedure

The data were collected in the 2016-2017 Spring Term via qualitative online surveys. In the study, the following steps were taken:

1. An invitation through an online google form was sent to students to be research mentors in the Peer Research Mentoring Program. This form included questions about the demographic characteristics of the participants and about why they would like to be research mentors. Research mentors were determined based on several criteria (the candidates' demographic characteristics, their previous mentoring experience in other courses, and their intentions to participate in the Peer Research Mentoring Program). Students taking the research skills course were divided into groups of 2 or 3 to prepare a research proposal. In determining the groups, students were asked to form their own groups with the peers they would like to work with.

2. Each research group was assigned a research mentor by using the random assignment method.

3. A brief information and training meeting was organized with the research mentors. The research mentors were provided information on the (a) Peer Research Mentoring Program and how it works, (b) expectations from the research mentors, (c) course expectations and requirements about writing a research proposal, and (d) recommendations and tips about the process.

4. Peer research mentors guided their peers to write an effective research proposal after completing the relevant training module. They utilized face-to-face meetings, WhatsApp and social networking sites to communicate with the mentees. The

mentors were expected to conduct weekly meetings, guide mentees in advancing their proposals, and answer mentees' questions when needed. Mentees were expected to develop their proposals taking mentor feedback into consideration.

5.   Upon completing the research mentoring process, data from the research mentors were collected for the second time (after the mentees submitted their research proposals). In addition, qualitative questionnaires were administered to students taking the course using an online google Form.

In order to ensure the trustworthiness of the study, credibility, transferability, dependability, and confirmability criteria were employed, as discussed by Guba and Lincoln (1982). Firstly, in this research, triangulation, which was defined as "building checks and balances into a design through multiple data collection strategies" by Patton (1987) was used. In order to enhance triangulation as a way to support validity, we collected data from different people (mentors and mentees) involved in the peer mentoring process. Furthermore, using interviews to delve into the concept and exhaustive description of the entire activity was essentially important to credibility (Lincoln & Guba, 1985; Yıldırım & Şimşek, 2006). In line with this, credibility was assured with the following: in-depth description throughout the process, prolonged time in data collection, getting expert opinions to review and revise data collection tools, verbatim interview transcripts, quotations to support interpretation, and double-coding by Author 1 and 2 in the data analysis part. In the double coding process, redundant codes were removed from the coding scheme and the codes were organized under the themes as suggested by Creswell (2011) upon the ongoing discussions between the first and second author. A detailed description was made to support transferability, dependability, and confirmability in the present study.

2.5. Data Analysis

Content analysis was used, and the data were explicitly categorized in line with the research questions and the related literature using a preliminary code list developed by the researchers. The data analysis process was initially conducted by Author 1, and then the same texts were analyzed and re-coded by Author 2. Next, the compliance between both researchers' analysis was compared as recommended by Miles and Huberman (1994). By means of this inter-rater coding process, the reliability of the study was enhanced. Four themes emerged from the study: (1) update in knowledge and skills, (2) research self-efficacy, (3) interest in research, and (4) communication skills. Among some of the codes were: "gaining first-hand research experience," "developing effective interactions," "sharing experiences," "motivation to participate in peer research mentoring program," and "developing interest in conducting research."

3. FINDINGS

Four overlapping themes emerged from the data analysis: (1) Update in knowledge and skills, (2) research self-efficacy, (3) research interest, and (4) communication skills. These themes are explained in detail next.

3.1. Update in Knowledge and Skills

The first theme emerging from the data analysis was the update in knowledge and skills. The results indicated that the Peer Research Mentoring Program enabled the peer mentors to develop first-hand research mentoring experience through guiding their peers in writing a research proposal. The research mentors guided their peers in each and every stage of proposal writing. Reflecting on how the program enabled her to develop first-hand research and/or research mentoring experience, PRM6 stated that: "It has been a little experience in the field of research for us (the research mentors). We have seen how the process worked in general terms…" Highlighting how the program helped her to gain practical experience in conducting research, PRM7 said that: "It was a great chance to practice the skills I believe I already had." Similarly, discussing how the mentoring program enabled her to update her knowledge and skills regarding conducting research, PRM10 stated that: "It (the Program) was a great chance to reiterate the knowledge (on conducting research) I had."

The results indicated that while guiding their peers, the mentors reflected on their learning experiences in conducting research, revised their course notes in Research Methods in Education, and updated their knowledge and skills in line with the emerging needs of mentees. The results further showed that the research mentors directed the mentees to useful sources when they were stuck with any topic. The results also indicated that the research mentors learned from the mentees as well during the mentoring process. For example, PRM5 stated that: "It (the Peer Research Mentoring Program) was mostly a process to enable me to remember the knowledge I had forgotten...It was a process where I learned new things from my peers (the mentees) too."

The results showed that one of the major aspects that the peer research mentors mostly focused on while guiding the mentees was how to write an appropriate research question in terms of significance, feasibility, and accuracy. The research mentors were found to encourage the mentees to find a research problem that would excite them to work on. While doing so, they shared their previous research experiences with the mentees. The results of the mentee interviews confirmed that finding as well. Two representative quotes are as follows:

> *"S/he (the mentor) suggested us to focus on our (research) interests and stated that we (mentees) would enjoy more in such a research study we conduct" (Mentee 2)*

"S/he (the mentor) enabled us to prepare a proposal, meeting the expectations better by sharing the weaknesses and strengths in her/his own study (that s/he conducted while taking the research course)" (Mentee 8).

3.2. Research Self-efficacy

The second theme emerging from the data analysis was research self-efficacy. More specifically, the results indicated that being involved in the Peer Research Mentoring Program increased the peer mentors' research self-efficacy. The data showed that as the mentors guided their peers in writing a research proposal, updated their knowledge and skills regarding conducting research, and gained first-hand research mentoring experience, they developed an increasing sense of research self-efficacy. Some participants also reported an emerging interest in pursuing graduate studies in line with the changes in their research self-efficacy and motivation. For example, PRM4 stated that:

It (the Program) enabled me to update my theoretical knowledge on conducting research through revising my notes from the research course. I gained more specific information regarding designing, conducting, and completing a research study. I wholeheartedly believe this will help me to conduct a scientific research study in the future.

Similarly, PRM10 stated that: "It (the Program) helped me to remember the research principles. At the same time, it was *satisfying* to help others about this." (Emphasis added)

The results indicated that there were some specific aspects of the program enhancing the mentors' research self-efficacy. Almost all mentors stated that while they were guiding the mentees in writing a research proposal, they shared their experiences in proposal writing with the mentees, provided the mentees with emotional support, and assisted them whenever they needed help. The results showed that this not only helped the mentees to get support on their research proposals and find answers for their questions, it also encouraged them to share their concerns with the mentors easily, to overcome their concerns about proposal writing, and to feel more confident in the work they had been doing. To illustrate, reflecting on the program, PRM8 said, "They (the mentees) asked the questions in their minds whenever they wished and they overcame that panic feeling. I helped them to decrease their panic feeling and have trust in the work they did." Another mentor (PRM7) stated, "I provided assurance (that they were on the right track). They sent everything they did to me and waited for approval."

Complementing the data from the mentors, the analysis of the mentee data indicated that the mentees appreciated being guided during the proposal writing process. For instance, Mentee 2 stated that: "S/he (the mentor) enabled us to look through different windows. She taught us not to do what we should do but how to do it." Similarly, Mentee 3 stated that: "It (the program) was quite effective. We had a chance to get started (working on the proposal) within a plan and knowing what to do."

Reflecting on possible contributions of the Peer Research Mentoring Program to the mentors, Mentee 4 stated:

When I share my knowledge with other people, I feel I learn better, and my knowledge strengthens. I believe the same thing applies to them (the mentors). When they are mentors, they feel more competent and capable in research. Moreover, they learn new things in each study they mentor.

Similarly, Mentee 6 stated that: "If they (the mentors) conduct their own studies in the future, I believe they will carry this process out more successfully/easily."

The results showed that the aforementioned aspects, in return, had a positive effect on the mentors' emotions as well. To illustrate, PRM 3 stated that: "...It made me happy to see the interest of my friends in learning, research, and getting information." Similarly, PRM2 said that:

Somehow I understood how to be more careful while guiding other people. And at the same time, I gained the experience to work with 2-3 people, meet them, come together for a purpose, and be their junior teacher. And I became very happy. (Emphasis added)

3.3. Research Interest

Research interest was the next theme emerging from the data analysis. The results indicated that all mentors had already an interest in research prior to the Peer Research Mentoring Program, which also motivated them to participate in the program. The results further indicated that there was an increase in some mentors' research interest as a result of this program. To illustrate, reflecting on how the mentoring program increased his research interest, PRM3 stated that: "It (the Peer Research Mentoring Program) positively affected (my research interest). Although I already liked research (prior to the program), there were some questions in my mind about how it (research) would look like in practice. Not anymore (questions)." Another mentor (PRM4) commented as follows:

Helping (the mentees) with developing a proposal throughout the peer mentoring process, being a mentor, and putting forward my ideas was really nice. Not being bored during the mentorship process and enjoying what I did increased my interest in research much more.

Likewise, PRM10 stated that: "I must say that I already have a great interest in research. I believe that taking this course previously has improved me a lot. In addition to this, I have noticed that this development continued through being a peer mentor in the same course."

The results also showed that there was not a reported change in some research mentors' research interests. The results indicated that those mentors already had a great interest in research, and thus their interest level did not change as a result of the mentoring program. To illustrate, PRM5 stated that: "I have had an interest in conducting research since the freshman year. I still have a great interest; however, I don't believe research mentoring has a positive or negative effect on this." Another peer mentor noted that:

In fact, I don't think that research mentoring has an impact on my research interest because this process (Peer Research Mentoring Program) has passed with giving feedback to my peers and learning something from them. I cannot say that there has been an effect (on my research interest) as I mostly followed what they did and was not involved in the process one-by-one (I did not write the proposal myself).

The results showed that independent of the impact of the program on the research mentoring process, all peer mentors, except for PRM5 and PRM6, would like to participate in the program in the future as peer mentors. PRM5 stated that he would like to be involved in different research studies as the reason why he did not want to participate in a later program. PRM6 stated that she would have a hectic school year and thus did not want to participate in the program next year. The results from interviews with mentees indicated that the mentoring program encouraged all mentees to be a potential candidate for the role "mentor" in a future Peer Research Mentoring Program, as well. To illustrate, Mentee 1 said that: "I honestly say that it would be great to write it (being a research mentor) on my CV."

The results also indicated that the program encouraged the mentees to put their proposals into practice after they get feedback from the instructor. To illustrate, Mentee 5 stated that: "We wish to continue the project we have prepared for this course, get ethical permissions from the University Ethics commission, and conduct the study as soon as possible." Another mentee (Mentee 7) stated that: "We (he and his group mates) have an idea to put the proposal we developed in the research course into practice."

3.4. Communication Skills

The fourth theme emerging from the analyses was the change in the participants' communication skills. As for how the communication between the mentors and the mentees took place, the results showed that almost all peer research mentors conducted face-to-face meetings with the mentees depending on either the request or emerging needs of the mentees regarding how to write a research proposal. The research mentors were found to supplement those meetings with majorly WhatsApp as the major communication channel. The face-to-face meetings were conducted majorly in computer laboratories where the mentees and mentors could work on the documents simultaneously and/or cafes at the University. WhatsApp and social networking sites were found to be useful platforms as the mentors and mentees had different class schedules and coursework, and thus they were preferred online meeting more when compared to the face-to-face meetings. The results indicated that some mentees were not interested in accepting help from the mentors, and thus, two mentors provided help only when requested to do so.

The results indicated that the Peer Research Mentoring Program positively contributed to all mentors' communication skills by enabling them to develop effective interactions with the mentees, and thus to gain a sense of communication fulfillment except for one mentor (PRM5), whose case will be explained later in this section. To illustrate, PRM2 stated that:

We were in continuous communication through WhatsApp. We had to be punctual in our meetings. The related correspondence, photographs, documents were sent there (WhatsApp). Meetings were arranged through there (WhatsApp). And as they (the mentees) are the people we meet new, we have to be kinder (towards them). I believe it had contributions regarding these (aforementioned points).

Similarly, PRM4 stated that,

This process has definitely contributed to my communication skills... Apart from being a process to update my knowledge, it (peer mentoring) was a process that helped me to regulate the relations in group work... For example, if a mentee does not fulfill his/her responsibilities regularly, asking about the problem rather than attaching this to his/her personality traits such as irresponsibility creates better results in terms of the group relations.

The results showed that the research mentoring process specifically enabled the participants to be more patient and develop active listening and speaking skills. For example, PRM6 stated that: "I do not like group work very much, but it taught me to be more patient and speak in front of the other people." Likewise, PRM8 noted that:

> *In terms of my communication skills, I noticed that as I met different people (mentees), my language use changed accordingly. For sure, there needs to be good communication to prepare a project, and mostly, active listening skill was used.*

Moreover, not having a previous close contact with the mentees seemed to affect the impact of the mentoring program on the mentees' communication skills in a positive way. To illustrate, PRM3 highlighted the impact of not having previous close contact with the mentees on his communication skills as follows:

> *My peer group was a group that I had not had close relationships with before. This helped both the mentoring process not to turn into a very friendly friendship relationship and gave me information about how to mentor people whom I do not know well. Although I did not have difficulty expressing myself (during the mentoring process), I had thought not knowing the mentees well would initially create problems. However, I believe we have formed a good peer relationship in a short time.*

Supporting the previous quotation, PRM5, who was the only participant that reported no meaningful change in his communication skills as he already personally knew the mentees that he guided, stated that he did not have a chance to further develop his communication skills as he had already close relations with the mentees. Complementing the data from the mentors, the data indicated that the Peer Research Mentoring Program contributed to the mentees' communication skills as well. As expressed by Mentee 2, "We were very prejudiced towards our mentor due to her/his appearance, but after knowing her/him, we noticed that this was nonsense. I promised myself that I would not do this in my next relations". Another mentee (M6) stated that: "I believe it increased my communication skills in group work. I think I have written a research proposal not only defending my opinions but also (respecting) the others' opinions."

4. RESULTS, DISCUSSION AND RECOMMENDATIONS

In this study, we aimed to capture the peer research mentoring experience of pre-service school counselors who were involved in a Peer Research Mentoring Program that we developed in an undergraduate level Research Methods course at an international university in Northern Cyprus. An in-depth look at the peer research mentors' experiences indicated that the peer research mentoring process contributed to the peer research mentors in a number of ways, which is discussed in line with the associated practical implications below.

Initially, in the present study, we found that the Peer Research Mentoring Program enabled the research mentors to gain first-hand research mentoring experience and helped them to update their knowledge and skills regarding how to conduct research as suggested by past research (Richards et al., 2014). The results further indicated that the research mentors also learned from the mentees in the mentoring process while enhancing their own knowledge and skills. This finding suggests that the peer research mentoring process is a mutual learning process where both the mentors and mentees learn from one another. It is encouraging to compare the present results with those of previous studies which demonstrated that peer mentoring had a variety of benefits not only for mentors but also for mentees (e.g., Lumpkin, 2011; Rosenkranz, 2012). Thus, our results suggest that peer research mentoring is a useful practice to be utilized in Research Methods courses to enhance the knowledge and skills of the students who have taken the course through letting them experience first-hand research mentoring experience and create interactive learning environments. These results are also in line with the past research showing the benefits of peer involvement in developing research skills and knowledge (Devi et al., 2010; Keller, Logan, Lindwall, & Beals, 2017; Murphy, 2015; Santucci et al., 2008). Although we deployed the mentoring program in the Research Methods course for prospective school counselors, similar programs including peer research mentoring components might be employed in the research methods courses or similar courses for teacher education programs.

The results in our study further indicated that gaining first-hand research mentoring experience and updating knowledge and skills in conducting research, in return, enabled the research mentors to develop a higher sense of research self-efficacy. These findings were in parallel with previous research discussing mentoring programs' impact on personal satisfaction, improved self-efficacy, and developing high-quality research skills (e.g., Balster et al., 2010; Levesley et al., 2015; Murphy, 2015; Robnett, Chemers, & Zurbriggen, 2015). In a quasi-experimental study with nursing students, Raymond and Sheppard (2018) reported an increase in self-efficacy of students attending a mentorship program. The authors suggested that students' personal satisfaction with the program could also increase as a result of this positive experience. Although we employed qualitative research, a similar relationship emerged between peer research mentoring and sense of efficacy. However, Jones (2006), in her dissertation study with counseling psychology doctoral students, found no support for the hypothesis testing the difference in research self-efficacy of students with and without a peer mentor. This difference might be explained by the nature of the mentoring experiences and the level of students. In our study, the mentoring was more structured and under the guidance of the instructor, while in Jones's study, peer mentoring occurs spontaneously without formal assignment. Different structures of mentoring needs further exploration.

The study has identified that being a peer mentor in the peer mentoring process positively impacted the research mentors' research interests. Here it is important to note that all participants had already reported interest in research prior to the Peer Research Mentoring Program, which also motivated them to participate in the Program. It is encouraging to state that apart from an increase in their research interest, some mentors developed an interest in pursuing graduate studies. Similarly, academic and career-related outcomes of research mentoring experience were reported earlier, as well (Byars-Winston et al., 2015; Craney et al., 2011; Eagan Jr et al., 2013; Hathaway et al., 2002). The analysis of the data showed that the mentors who did not report a change in their research interests already had a high level of interest level. The results also indicated that almost all mentors wished to be a mentor in the future research mentoring programs. This finding is supported by Vasylyeva et al.'s (2019) study which also showed mentors' willingness to serve as mentors in the future. Another interesting finding emerging from the study is that the mentees participating in the qualitative survey also reported an interest in becoming a research mentor in the future. It is encouraging to compare this finding with those of the previous studies which suggest that peer mentors become role models for the mentees and encourage the mentees to follow a similar track (e.g., Allen, Abby & Lentz, 2006). Considering that a high level of research knowledge and skills is expected from school counselors to hold, motivating prospective school counselors to develop an interest in conducting research is promising. The mentees also indicated an interest in putting their research proposals into practice after they got the final feedback about their proposals from the course instructor. Considering that putting the research proposal into action is not a requirement of the course, the mentee's interest in conducting the research they proposed in their proposals, even when a grade is not assigned, is encouraging. One recommendation might be to provide further consultation to those mentees to conduct their studies after the course is over to avoid decreasing interest or motivation in conducting their proposed studies. We suggest that those who offer research methods and/or similar courses at the undergraduate level could use the Peer Research Mentoring Program as part of their classroom practices to develop both the peer mentors' and mentees' research skills and interests. Possible benefits of the program for both parties could be presented to them prior to the implementation of the program to enhance active participation.

This study has shown that the peer mentoring process also contributed to all peer research mentors' communication skills, except for one, by enabling them to enhance their active listening skills and develop more effective interactions with their peers. Past research also suggested improvement in the communication and social skills as a benefit of undergraduate research experience through mentoring programs (Bauer & Bennett, 2003; Beltman & Schaeben, 2012; Craney et al., 2011). Indeed, for effective mentoring programs, effective communication is required throughout the process, both between mentor and mentee and between the mentoring participants and groups (Levesley et al., 2015). It is also important to note that having previous relationships with the mentees seems to be one of the factors affecting the mentor's approach and attitudes towards the mentoring process. Further studies are required to understand how previous relationships between the mentors and mentees affect the group dynamics during the mentoring process.

One of the significant findings emerging from the study is that some mentees were not willing to accept help from the peer research mentors, which seemed to affect the peer research mentoring process. The results suggested that two mentors who experienced that problem organized fewer gatherings with the mentees when compared to the other mentors. We believe that although this could have negatively impacted these two research mentors' experiences, it is encouraging to state that one of the mentors who had a high level of research interest still wanted to be involved in a similar Peer Research Mentoring Program. Considering the nature of the relationships, one might note that this is an inevitable part of any peer mentoring program. Thus, providing mentors with knowledge and strategies about how to communicate with a mentee not interested in getting help from the mentors might enable the mentors to develop a better repertoire of mentoring strategies. Apart from this, the importance of getting help from the mentors could be highlighted by the course instructors prior to such a peer mentoring program. Another suggestion would be to invite peer mentors and mentees who were involved in the previous program to the class to express their peer mentoring experiences to new students. These might motivate students to participate in this program and benefit more fully from the program.

Overall, this study establishes a qualitative framework for understanding the peer research mentoring process and offers a number of practical implications, as also discussed above. Research methods courses in undergraduate education provide several benefits such as research skill development (Devi et al., 2010), increased academic achievement (Craney et al., 2011; Leidenfrost et al., 2011), better communication (Mekolichick & Gibbs, 2012) and improved critical thinking skills (Seymour et al., 2004). Higher education institutions should offer research programs highlighting active student participation, as suggested by Bauer and Bennett (2003). As discussed earlier in the paper, currently, the research methods course is offered as a two-credit course in teacher education programs in Turkey. Effective interventions like peer research mentoring programs need to be utilized to maximize the benefits of the research courses. Continued efforts are needed to create active learning environments in research methods courses in teacher education programs.

This study has some limitations. Firstly, it is essential to note that the peer research mentors, who were involved in this study, had volunteered to participate in the study and already had a reported interest in research. Next, the study was conducted in one institution and in one specific program with limited participants, which restricts generalizability. In spite of its limitations, our study adds to our understanding of undergraduate students' research mentoring experiences in an international university context. Further studies are recommended with broader settings, including different universities, programs and even different countries in a comparative design. Future research might explore the impact of the Peer Research Mentoring Program on the long-term research experiences of the research mentors. Future research could also be conducted to find out the effect of the

Peer Research Mentoring Program on the related variables (including but not limited to interest and motivation in research, research self-efficacy, and research productivity) using a mixed-method research design with an embedded experimental model (Creswell & Clark, 2017).

Research and Publication Ethics Statement

The paper is complied with research and publication ethics.

Contribution Rates of Authors to the Article

Iclal Can: Data collection, method, data analysis, discussion. Sevinç Gelmez-Burakgazi: Method, data analysis, discussion. Yeşim Çapa Aydın: Data collection, method, discussion. Muhammet Coşkun: Introduction, discussion.

Statement of Interest

The authors declare that they have no conflicts of interest.

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6. GENİŞ ÖZET

Bu çalışmanın amacı, lisans düzeyinde yürütülen Araştırma Yöntemleri dersinde uygulanan Akran Araştırma Danışmanlığı Programı'nda akran araştırma danışmanı olarak yer alan okul psikolojik danışmanı adaylarının, akran araştırma danışmanlığı deneyimlerinin incelenmesidir. Araştırmada nitel araştırma yöntemlerinden bütüncül tekli durum deseni kullanılmıştır. Bu kapsamda, Kuzey Kıbrıs Türk Cumhuriyeti'nde uluslararası bir üniversitede yürütülen Araştırma Yöntemleri dersini tamamlamış 10 okul psikolojik danışmanı adayı, ölçüt örnekleme yöntemi aracılığıyla akran araştırma danışmanı olarak belirlenmiştir. Akran araştırma danışmanları, 2016-2017 bahar döneminde Araştırma Yöntemleri dersini almakta olan okul psikolojik danışmanı adayları ile eşleştirilmiştir. Akran araştırma danışmanları, ilgili eğitim modülünü tamamladıktan sonra, akranlarına etkili bir araştırma önerisi yazma konusunda rehberlik etmişlerdir. 10 akran araştırma danışmanı ve 9 danışandan nitel anketler aracılığıyla veri elde edilmiştir. Anketler, araştırmacılar tarafından ilgili alanyazın ışığında üç grup halinde geliştirilmiştir ve uzman görüşleri doğrultusunda son şekline getirilmiştir. İki form araştırma danışmanları için olup, Akran Araştırma Danışmanlığı Programı'ndan önce ve sonra uygulanmıştır ve bir tanesi danışanlar için olup Akran Araştırma Danışmanlığı Programı'ndan sonra uygulanmıştır. Elde edilen veri, içerik analizine tabi tutulmuştur.

Veri analizi doğrultusunda birbirini tamamlayan 4 ana tema ortaya çıkmıştır. Bu temalar şunlardır: (1) Bilgi ve becerilerin güncellenmesi, (2) araştırma öz-yeterliği, (c) araştırmaya karşı ilgi ve (4) iletişim becerileri. Öncelikle, araştırma sonuçları, akran araştırma danışmanlığı sürecinin, akran danışmanlarının birinci elden araştırma deneyimi elde etmelerine olanak sağladığını ve bu süreçte araştırmaya yönelik bilgi ve becerilerini güncellemelerine katkı sağladığını ortaya koymaktadır. Araştırma sonuçları, akran araştırma danışmanlarının, araştırma danışmanlığı sürecinde kendi öğrenme deneyimleri üzerinde düşündüklerini; araştırma yöntemleri dersinde aldıkları ders notlarını gözden geçirdiklerini; danışmanlık sürecinde ortaya çıkan ihtiyaçlar doğrultusunda bilgi ve becerilerini güncellediklerini ve zaman zaman akranlarından da öğrendiklerini göstermektedir. Araştırma sonuçları, akran araştırma danışmanlarının, akranlarına, iyi bir araştırma yazma konusunda rehberlik ederken, akranlarını, özellikle üzerinde çalışmak istedikleri bir araştırma konusu belirleme ve iyi bir araştırma sorusu yazma gibi konularda teşvik ettiklerini göstermekte ve akran araştırma danışmanlarının, birinci elden araştırma deneyimi kazanmaları ve bilgi ve becerilerini güncellemeleri ile paralel olarak, araştırma öz-yeterliklerinde de bir artış olduğunu ortaya koymaktadır. Bazı akran araştırma danışmanları, artan araştırma öz-yeterliği ve motivasyon ile birlikte yüksek lisans yapma konusunda ilgilerinin arttığını belirtmiştir. Veri analizi, araştırma danışmanlarının, araştırma önerisi yazma konusundaki deneyimlerini akranları ile paylaşmaları; akranlarına duygusal destek vermeleri ve akranlarına araştırma önerisi konusunda desteğe ihtiyaçları olduğunda destek vermeleri; danışanların araştırma önerileri konusunda destek almalarına ve sorularına yanıt bulmalarına olanak sağlamanın yanı sıra, danışanların kaygılarını rahatlıkla akran danışmanları ile paylaşmalarına, araştırma önerisi yazma konusunda endişelerinin üstesinden gelmelerine ve yaptıkları iş konusunda daha emin adımlarla ilerlemelerine olanak sağladığını göstermektedir. Araştırma sonuçları, tüm bu süreçlerin, akran danışmanlarının araştırma öz-yeterliğini olumlu şekilde etkilediğini göstermektedir. Veri analizi konusunda ortaya çıkan üçüncü tema, araştırmaya yönelik ilgidir. Araştırma sonuçları, akran araştırma danışmanlarının programdan önce de araştırmaya yönelik ilgisi olduğunu ve bu ilginin, onları araştırmada akran danışmanı olarak yer almaları konusunda cesaretlendirdiğini göstermektedir. Veri analizi, Akran Araştırma Danışmanlığı Programı sürecinin bazı akran danışmanlarının araştırmaya yönelik ilgisini daha da arttırdığını ortaya koymaktadır. Araştırmaya yönelik ilgilerinde herhangi bir anlamlı artış görülmeyen akran danışmanlarından elde edilen veri incelendiğinde bu danışmanların hâlihazırda yüksek düzeyde araştırmaya yönelik ilgisi olduğu görülmektedir. İki akran danışmanı dışında tüm danışanlar bir sonraki Akran Araştırma Danışmanlığı Programı'nda akran danışmanı olarak yer almak istediklerini belirtmişlerdir. Danışanlardan elde edilen veri incelendiğinde, Akran Araştırma Danışmanlığı Programı'nın danışanların da araştırmaya ilgisinin arttığı ve çalışmada yer alan tüm danışanların daha sonra düzenlenecek olan Akran Araştırma Danışmanlığı Programı'nda akran araştırma danışmanı olarak yer almak istedikleri ortaya çıkmıştır. Çalışma sonucunda ortaya çıkan bir başka tema ise katılımcıların iletişim becerileri ile ilintilidir. Araştırma sonuçları, akran danışmanlığı sürecinin, bir kişi dışında tüm danışmanların iletişim becerilerini olumlu olarak etkilediğini ortaya koymaktadır. Ayrıca, araştırma sonuçları, akran danışmanlığı sürecinin, akranların danışmanlık yaptığı grup ve grup ile ilişkileri doğrultusunda

şekillendiğini ortaya koymaktadır. Hemen hemen tüm akran danışmanları, danışanlardan gelen destek talebi ve/ya araştırma önerisi yazma konusunda ortaya çıkan ihtiyaçlar doğrultusunda danışanlarla yüz yüze görüşme gerçekleştirmiştir. Yüz yüze görüşmeler, genellikle danışman ve danışanların aynı anda doküman üzerinde çalışabilmelerine olanak sağlayan üniversitede bulunan bilgisayar laboratuvarlarında ve/ya kafelerde gerçekleştirilmiştir. Bu görüşmeler, genellikle temel iletişim aracı olarak WhatsApp uygulaması ile desteklenmiştir. WhatsApp uygulaması ve sosyal iletişim siteleri, danışmanlar ve danışanların farklı ders programları ve ders yükü dolayısıyla, yüz yüze görüşmelere göre daha fazla tercih edilmiştir. Araştırma sonuçları, bazı danışanların, destek alma konusunda istekli olmadığını ve bununla ilintili olarak da bu danışanlarla çalışan akran araştırma danışmanların sadece gerektiğinde yardım sağladığını ortaya koymaktadır. Bu durum aynı zamanda, araştırma danışmanlarının motivasyonunu olumsuz yönde etkilemiştir. Bu noktada ortaya çıkan bir başka bulgu ise danışmanlık sürecinden önce akran danışmanlarının akranlarıyla olan ilişkilerinin süreç üzerindeki etkisi ile ilintilidir. Araştırma sonuçları daha önce akran danışmanları ile yakın ilişkiye sahip olmamanın, araştırma danışmanlığı sürecini olumlu bir şekilde etkileyebileceğini ortaya koymaktadır. Araştırma bulgularının, gelecekte planlanacak olan araştırma derslerinde Akran Araştırma Danışmanlığı Programı uygulamasının katkısını ortaya koyması yönü ile paydaşlara ve politika yapıcılara katkı sağlaması düşünülmektedir.