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Research competence in initial teacher education: Perceptions, orientations, and suggestions

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ABSTRACT This study aimed to investigate student teachers' perceived competence in educational research, along with teacher educators' and graduates' opinions and suggestions regarding research in an initial English language teacher education program at a state university in Türkiye. To this end, this case study employed a mixed-method design to explore data from 70 student teachers, nine graduates, and six teacher educators through surveys and interviews. We observed that the student teachers perceive themselves as competent in designing, conducting, and reporting research, and their competence was also acknowledged by the graduates and teacher educators. All the participants highlighted the importance of research for teachers; however, some had reservations. They found the context too academically oriented and emphasized the need to introduce the inherent link between teaching and research, which seemed to be obscure especially for the student teachers. We conclude that introducing action research early on is an ideal way to address and embrace all the diverse perceptions, orientations, interests, and motivations about research in initial teacher education.

Keywords: *Action research, Initial teacher education, Research competencies, Student-teacher competence*

Hizmet öncesi öğretmen eğitiminde araştırma yeterliği: Algı, yönelim ve öneriler

ÖZ Bu çalışmanın amacı, Türkiye'de bir devlet üniversitesinde İngilizce öğretmenliği programında öğrenim gören öğretmen adaylarının eğitim araştırması yapma bağlamındaki özyeterlik algıları ile öğretmen eğitimcisi ve mezunlarının hizmet öncesi öğretmen eğitiminde araştırma ile ilgili görüş ve önerilerini araştırmaktır. Bu amaçla kurgulanan durum çalışmasında 70 öğretmen adayı, 9 mezun ve 6 öğretmen eğitimcisinden karma yöntem kullanılarak anket ve sözlü görüşmeler yoluyla elde edilen veriler incelenmiştir. Araştırma sonuçlarına göre öğretmen adayları kendilerini araştırma tasarlamada, uygulamada ve raporlamada yetkin olarak değerlendirmişler, mezunlar ve öğretmen eğitimcileri de bu yönde görüş bildirmiştir. Katılımcıların tamamı öğretmen adayları için araştırma yapmanın öneminin altını çizmiş ancak bazı katılımcılar çekincelerini de dile getirmişlerdir. Bu katılımcılar programı fazla akademik odaklı bulmaktadır; özellikle öğretmen adaylarının görmekte zorluk çektiği temel öğretmenlik-araştırma bağlantısının programda daha çok vurgulanmasına yönelik ihtiyaca dikkat çekmişlerdir. Çalışma sonucunda, hizmet öncesi öğretimde araştırmaya yönelik farklı algı, yönelim, ilgi ve motivasyonların etkin şekilde ele alınabilmesi için eylem araştırmasını müfredata daha erken dahil etmenin ideal bir yöntem olduğu belirtilmiştir.

Anahtar Sözcükler: *Araştırma yeterliği, Eylem araştırması, Hizmet öncesi öğretmen eğitimi, Öğretmen adaylarının yeterlikleri*

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INTRODUCTION

Raising teachers oriented to exploration and investigation is one of the desirable goals for teacher education programs recently (Fichten, 2019). In line with the Bologna Process, university-based initial teacher education (henceforth ITE) programs now adopt inquiry-based learning where student teachers (henceforth STs) reflect on and test what they have been taught and actively participate in knowledge construction through practice (Fichten, 2019; van der Linden et al., 2015). For this reason, ITE programs offer research courses to develop STs' research skills (Cochran-Smith et al., 2009).

In teacher education programs there are two main potential directions that may lead to the inclusion of educational research: (1) an academic perspective which mostly concentrates on the development of academic skills of STs and familiarizing them with academic theoretical discourse, and (2) a professional development perspective which leans on reflective approaches and lays emphasis on research engagement as professional continuous learning (Reis-Jorge, 2005). Recently, there are many studies exploring the second direction, namely STs conducting research in practicum, mostly in the form of action research (Akyel, 2015; Crawford-Garrett et al., 2015; Ulvik & Riese, 2016). After Munthe and Rogne (2015)'s finding that "there is little knowledge about how ITE programs address research for students" (p. 17), a few studies have emerged to investigate this scholarly perspective across the program (van Katwijk et al., 2021; White et al., 2016) mostly focusing on STs' perspectives and perceived competence.

Similarly, in Türkiye, studies on STs' engagement with educational research are mostly limited to action research which STs conduct in their practicum or methodology courses (Akyel, 2015). However, the perceived competence of STs in English Language Teacher Education program (ELTE, hereafter) in educational research has not been extensively studied yet (except Tanış, 2019). In this study, we aim to explore student teachers' research competencies (such as writing research questions, designing data collection tools, etc.) in the context of a highly competitive ELTE at a state university in Türkiye where inquiry-based learning is highly valued, and research culture has flourished. We focus on the fourth-year STs' perceived research competence (overall level) with regards to "designing, conducting and reporting small-scale educational research" since the program has an outcome on these basic elements of doing research. In this sense, this study aims to present a comprehensive and detailed view of STs' general educational research abilities from the perspectives of STs, graduates, and teacher educators (henceforth, we will use the terms "educational research" and "research" interchangeably to refer to educational research, especially in the context of English language teaching).

Research and Initial Teacher Education

It has been acknowledged that teacher learning is a lifelong process, and inquiry is an indispensable part of a teacher's job involving questioning and reflecting on practice to improve student learning. Teaching is a profession that requires adaptation to different contexts (van Katwijk et al., 2021) and finding solutions to complex and unprecedented educational issues (Darling-Hammond & Bransford, 2005). For this, rather than having externally produced knowledge, teachers themselves should directly become both producers and consumers of research (Rust, 2009). To accomplish this, studies (Cochran-Smith et al., 2009; van Katwijk et al., 2021) emphasize that STs adopt *inquiry as a stance*, and they point out the need for raising STs as researchers (Bullock, 2016) during ITE. Adopting or developing an *inquiry stance* as a professional value could be possible by integrating research into the teacher education curriculum.

Overall, studies conducted with student teachers generally indicate that research is a fruitful professional activity to adopt in teacher education and integrating educational research course help STs to be proficient in research literacy (Groß Ophoff et al., 2015); they feel empowered, and research leads to quality teaching (van Katwijk et al., 2021). It allows STs to test theories and make their own decisions in their practice and see it as a transformative experience (Crawford-Garrett et al., 2015). Research also helps STs become much more reflective (Kotsopoulos et al., 2012). Moreover, engaging STs in research

is a first step to raising *teacher researchers* for the future (White et al., 2016); efforts to integrate research based ITE help not only STs but teacher educators also benefit from the process (Szecsi et al., 2019).

Although research integration into ITE is appreciated, some STs are reported to have negative attitudes toward research courses due to the methodological approaches instructors use in the courses (Matos et al., 2023). On a similar note, many teachers believe that "research is what is done on teachers rather than by teachers" (McKay, 2009, p. 286), or they consider it a highly complex statistical work (Borg, 2009). For this reason, a well-designed research course will be effective in changing the attitudes of STs and preparing them for their future professional practice, thereby increasing the likelihood of future practices (Akyel, 2015; Guilbert et al., 2016).

How ITE programs address research is highly contextual and varies even within the program (Munthe & Rogne, 2015). In the international context, there is a growing interest in investigating research integration into initial teacher education programs. In White et al.'s (2016) study, a group of pre-service teachers studying in the Teaching English as a Foreign Language program received research training for a year at an exchange program in Australia. After receiving the research education, teacher candidates returned to their home universities and conducted teacher research in local schools in Malaysia. The findings suggested that there is an improvement in research knowledge and research implementation. In the Dutch primary education context, van Katwijk et al. (2021) investigated the development of an inquiry stance during the ITE. It was suggested that pre-service teachers perceived teacher inquiry as valuable and useful; however, half of the teacher candidates thought that they would probably not engage in such practices after graduation.

In the Turkish context, there are relatively fewer studies on the research competence of pre-service teachers in the ELTE programs. Tanış (2019) reported that the specific ELTE program she investigated in Türkiye contributed to the pre-service teachers' research skills to a great extent; however, it did not promote teacher research. The findings of the study showed that the candidate teachers did not have a clear understanding of teacher research. Namely, the program contributed to the academic perspective rather than the professional development perspective for teachers. While specific ELTE programs in Türkiye may address research differently, in the curriculum, there is one specific course, and it has been argued to be "too broad and insufficient" (Kızılaslan & Leutwyler, 2012, p. 159) to equip student teachers with the necessary knowledge to conduct further research, especially action research in the practicum. Oztabay's (2017) analysis of the current ELTE curriculum in Türkiye showed that policymakers value teacher research; however, it was claimed that its scope and definition are not clearly articulated, "explicit research orientation is underrepresented" (p. 96), and its integration into the curriculum is vague and superficial.

Therefore, more research is needed to understand how this integration takes place, how competent STs are and what can be done to improve research competence. In that sense, the present study attempts to unearth this specific ITE program's research orientation by examining different stakeholders' views on STs' research competence in an ITE program.

The following research questions led to the present study: According to the STs, graduates, and teacher educators,
1. How competent are STs at designing, conducting, and reporting research?
2. How is research and its role perceived in this ITE context?
3. How can STs' competence in research be improved?

METHODOLOGY

This study aims to explore student teachers' research competencies (as specific skills), particularly in

designing, conducting, and reporting educational research projects through an analysis of their perceptions and the opinions of graduates and teacher educators in the same context. Besides, the study aims to draw implications for developing STs' research competence (overall skill level) in ITE based on the perceptions and suggestions of the participants.

We adopted a case study design (Creswell, 2005) with a mixed-methods approach (Dörnyei, 2007) to explore in-depth how participants perceive STs' research competency in a specific ITE program. Furthermore, the study is bounded by the case of this particular ELTE program but might have implications for ITE practice and policy, and for ELTE in particular.

Context of the Study

ITE program and participants

In Türkiye, initial teacher education (ITE) is offered at the tertiary level, through 4-year BA programs at Faculties of Education. This study was conducted in a tertiary-level English Language Teacher Education (ELTE) program offered at one of the highest-ranking universities in Türkiye. During the time of data collection, the ITE program was under the control of the Higher Education Council (HEC) which has the duties of organization, planning and supervision of all higher education institutions (Coşkun & Daloğlu, 2010). The teacher education departments gained autonomy to develop, revise and adapt their programs in 2020 (HEC, 2020). The university is among the research-intensive universities announced by HEC. Research-intensive universities differ from other universities in terms of the funding they receive and the support for the staff, not in terms of the educational programs they offer to their students. They usually have more faculty specializing in different areas (such as linguistics, literature, teacher education, and language teaching in our case) at the same department. Being a research-intensive university does not directly mean that students receive more research courses *per se*; however, due to the resources available, research-intensive universities tend to have a more research-oriented culture.

In the case of the present study, the ELTE program has a course called Advanced Writing and Research Skills, for 4 European Credit Transfer System (ECTS) credits, offered in the fifth semester. In addition, the program has a specific outcome regarding STs' research competence: students "should be able to individually and collaboratively design, conduct, and report small-scale educational research projects by employing relevant research methods in the investigation of language with teachers from local, national or international contexts" (The University website, reference masked for anonymity).

Through convenience sampling (Dörnyei, 2007), the data were collected from 85 participants in total. There were 70 fourth-year STs, nine graduates, and six teacher educators. All STs were about to graduate within one month at the time of the data collection, therefore had taken (or were taking) all the courses offered in the program: language skills, methodology, literature and culture, linguistics, and educational sciences with 240 ECTS credits in total. 50 out of 70 STs had plans to apply for a master's degree in a related field.

Out of nine recent graduates with at least three years of experience, four were research assistants, two were language instructors at the tertiary level, and two were language teachers teaching primary and secondary students. One graduate worked as an interpreter. Five of them held an MA degree in ELTE. Six teacher educators held faculty positions with competitive research requirements which translated as substantial experience in research and publishing, and they held Ph.D. degrees in ELT and linguistics. They had been offering language, methodology, linguistics, and practicum courses for at least ten years in this context.

Data Collection Procedure and Instruments

We, the researchers, were quite familiar with the context as we had observed and assisted numerous

classes at this ELTE department and had worked there as research assistants for more than seven years. We had an insider-emic perspective (Creswell, 2005). The first author collected the data, and the others joined her in design, analysis, and reporting.

Ethical approval was issued for the research procedures and instruments utilized in this study before the project started (Document Number: 2016-EGT-076, institution masked for anonymity). The project relied on voluntary participation verified through informed verbal and written consent taken from the participants for the use of their data for research purposes, including analyses by the researchers and anonymous dissemination of their responses and findings.

Both quantitative and qualitative data were collected during this mixed-method study (Dörnyei, 2007). It utilized quantitative ST questionnaires on research competency, qualitative surveys for STs and for graduates, and interviews with teacher educators. To ensure validity, we collected data from different stakeholders (STs, graduates and teacher educators) triangulating data sources, and used different data collection tools (quantitative surveys, qualitative surveys, and interviews) and the data were later analyzed by multiple analysts (Patton, 2015).

The data collection procedure lasted for seven weeks. We piloted the quantitative questionnaire with the third-year students and edited it as needed. Later, the quantitative questionnaire was administered to the fourth-year students. Qualitative data were collected from the same group of volunteer STs and the graduates of the program. In the meantime, we conducted interviews with six teacher educators.

Quantitative and qualitative data from ST and graduate surveys

The quantitative ST questionnaire was adapted from White et al.'s (2016) research knowledge survey which included 10 items on a six-point scale. The original items covered "key aspects of research methods" (White et al., 2016, p. 38). Our insider perspective enabled us to enhance the scope of the survey by adding 13 more items based on what Dörnyei (2007) suggested as the important components of carrying out research. Dörnyei (2007) was chosen as it was commonly used by the instructors in this context. Overall, the extended questionnaire included 10 items for designing, seven items for conducting and six items for reporting a research study. All items were on a six-point rating scale - consistent with the original tool. Having an even number of options on the scale also helped us see the negative and positive tendencies in the data by eliminating a neutral middle point. On our scale, 1 represented limited, 2: fairly limited, 3: somehow limited, 4: somewhat good, 5: good, and 6: very good. In the last section, four open-ended questions asked STs' research experiences and future plans. After the review, revision, and approval of the extended draft by an ELT expert, the researchers piloted the adapted questionnaire with 25 sophomore STs. They read, rated each item and stated if there were any unclear statements. They reported no challenges. The final version was administered to 70 senior STs. Besides, nine of them volunteered for a further qualitative survey with six questions about the role and importance of research in their education as teachers, adequacy of research focus and engagement, and their suggestions for improvement (Please see Appendix 1).

Graduates (N=9) were given another qualitative survey with six open-ended questions (Please see Appendix 2) asking for their experiences in terms of the role and importance of research in the ITE, their evaluation of the adequacy of research competencies they gained and their suggestions for improvement. In addition, it had four questions about their background and research experiences.

Interviews with teacher educators

To obtain teacher educators' opinions regarding the STs' research competence, six teacher educators were interviewed. The interview included eight questions about STs' competence in and attitudes toward research, the role of research in the program, and teacher educators' suggestions to improve STs' research competence as can be seen in Appendix 3. The duration of the interviews ranged from 30 to 60 minutes. The interviews were audio-recorded and verbatim-transcribed.

Table 1 below presents the data collection tools and participants in relation to each research question with clarity.

Table 1.
Methodology of the Study

Research Questions	Participants	Data Collection Tools
1. How competent are STs at designing, conducting, and reporting research?	70 Senior STs 9 Graduates 6 Teacher Educators	Quantitative Survey with STs, Qualitative Survey with STs, Qualitative Survey with Graduates, Interviews with Teacher Educators
2. How is research and its role perceived in this ITE context?	9 Senior STs 9 Graduates 6 Teacher Educators	Qualitative Survey with STs, Qualitative Survey with Graduates, Interviews with Teacher Educators
3. How can STs' competence in research be improved?		

Data Analysis

Since this was designed as a mixed-method study, both quantitative and qualitative data analysis techniques were used. The quantitative data were entered into SPSS. The Cronbach's alpha coefficient was found to be .92, which could be interpreted as very satisfactory (Dörnyei, 2007). Descriptive statistics were calculated on the six-point STs' questionnaire and mean, frequency, mode, and median values were reported.

With regards to STs' open-ended questionnaires, the graduates' questionnaire and interviews for teacher educators, a content analysis, which could be defined as a technique for producing valid inferences from the text, was utilized (Krippendorf, 2004). After reading the interview transcripts and the data from both questionnaires a few times, the researchers tried to reach a deeper meaning by coding and then combining the codes to obtain themes which ensured analysts triangulation (Patton, 2015). Obtaining data from multiple sources and using different methods contributed to the accuracy of the results. To ensure confidentiality, a participant ID was assigned to each participant.

RESULTS

In this section, we will first report the quantitative results to outline STs' perceived competence in designing, conducting, and reporting research. We will continue showing how the role of research was perceived and what suggestions were made by the STs, graduates and teacher educators to enhance the understanding and appreciation of research in ITE.

STs' Research Competence

The analyses of the quantitative ST survey indicated that STs' overall perception of their competence in research was positive; in other words, they perceived themselves to be well-competent in most research areas. For the 23 items on our 6-point scale, all the modes and medians were observed to be either at or above 4; with the mode being 4 in ten items, mode=5 in 11, and mode=6 in two items. When the survey items were analyzed in terms of three leading phases of research, i.e., designing, conducting, and reporting, it was seen that STs rated their knowledge/skills in reporting research the highest (M=4.44), while they considered themselves the least competent in conducting research (M=4.04) and their perceived competence in design was in-between (M=4.20). These skills will be further discussed in relation to the data presented in the relevant tables below. At this point, it is important to note that in these tables, the label "positive" stands for scale options 4,5 and 6 (good knowledge) while "negative" covers the options 1, 2 and 3 (limited knowledge).

In the survey, ten items asked for STs' self-evaluation of their competencies in designing a research study. As Table 2 shows, the STs' perceptions of their competency in all design items were positive with all modes and medians at or above 4 (with overall M=4.2). The highest perceived competencies were reported in the understanding of the concepts of reliability and validity (M=4.84 and M=4.80, respectively, both with Mdn=5.00 and Mode=5), with at least 88.5% (n=62) of all STs positively evaluating their competencies in both areas. Acknowledging that the STs' overall perception of their competency in research design was observed to be positive with at least 60% of all STs reporting good competence levels, the areas with the lowest mean scores and modes stand out. In contrast to their "understanding" of qualitative and quantitative designs, and of theoretical constructs of validity and reliability (with less than only 20% of STs perceiving their competencies negatively for each), the STs were observed to be relatively less confident about their "skills" in identifying a research problem (37% perceived their competencies to be limited with M=3.81 and Mdn=4.00), formulating appropriate research questions (40% reporting limited competence with M=3.73 and Mdn=4), selecting data collection methods and appropriate analytical procedures (31.42% and 34.3% reporting limited competence with M=4.01 and M=3.79, respectively). Lastly, STs thought that they had somewhat good knowledge about research methods in general (M=3.73, Mode=4), their response clustered around "somewhat good" with 40% of them on the 4th point on the scale, while only 5.7% reporting the highest perceived competence levels.

Table 2.
Designing Educational Research

Competency Indicator	f	Negative	Positive	Mean	Median	Mode
1. knowledge about research methods in general	*n*	25	45	3.73	4.00	4
	%	35.71	64.29			
2. skills in identifying a problem for research purposes in a teaching-related context	*n*	26	44	3.81	4.00	5
	%	37.14	62.86			
3. skills in formulating appropriate research questions	*n*	28	42	3.73	4.00	4
	%	40	60			
4. skills in choosing appropriate data collection methods	*n*	22	48	4.01	4.00	5
	%	31.42	68.58			
5. skills in selecting appropriate data analysis procedures	*n*	24	46	3.79	4.00	4
	%	34.28	65.72			
6. understanding of qualitative research	*n*	14	56	4.56	5.00	5
	%	20	80			
7. understanding of quantitative research	*n*	13	57	4.63	5.00	5
	%	18.57	81.43			
8. understanding of mixed methods designs	*n*	24	46	4.09	4.00	4 and 5
	%	34.28	65.72			
9. understanding of reliability	*n*	7	62	4.84	5.00	5
	%	10	88.6			
10. understanding of validity	*n*	8	62	4.80	5.00	5
	%	11.42	88.58			

Conducting a research study was the category in which the lowest scores of perceived competence were reported (overall category M=4.04). However, perceived competence varied to a great extent on some items as demonstrated in Table 3. STs reported relatively limited competence in quantitative and qualitative analytical procedures (45.71% negative, M=3.60 for both) and lowest perceived competence in conducting experimental research (M=3.49 with 47.14% of the participants, n=33, evaluating their competence to be limited). Skills in selecting appropriate participants (M=4.86, Mode 5 with 91.43% reporting positive perceptions, and 68.5% reporting to be good or very good) and completing ethical procedures (with only 20% perceiving their competencies to be limited, M=4.43 and Mode=5) were seen to be the areas where STs felt more confident.

Table 3.
Conducting Educational Research

Competency Indicator	*f*	Negative	Positive	Mean	Median	Mode
11. skills in selecting appropriate participants	*n*	6	64	4.86	5.00	5
	%	8.57	91.43			
12. skills in designing effective surveys	*n*	19	51	4.17	4.00	4
	%	27.14	72.86			
13. skills in conducting experimental research	*n*	33	37	3.49	4.00	4
	%	47.14	52.86			
14. skills in planning interviews	*n*	17	53	4.19	4.00	4
	%	24.28	75.72			
15. skills in conducting the appropriate statistical procedures on quantitative data	*n*	32	38	3.60	4.00	4
	%	45.71	54.29			
16. skills in coding qualitative data	*n*	32	38	3.60	4.00	4
	%	45.71	54.29			
17. skills in applying for ethical approval	*n*	14	56	4.86	5.00	5
	%	6	64			

Reporting a research study was the sub-category of carrying out a study at which the STs thought they were more competent (M=4.43). Among the six questions addressing reporting a study, STs evaluated themselves as the least skillful at writing a proper literature review (M=4.03; Mode=4) as displayed in Table 4. Similarly, searching for literature (M=4.14) was observed to be another area where the lowest perceptions of competence were observed in the category. However, it should be noted that both items still had more positive perceptions than negatives. More specifically, at least 68.5% of all participants thought they had good skills in these areas. Citing sources (M=4.67 and 31.4% reporting the highest competence, M=6), using APA style in reporting (M=4.64 and 34.3% reporting highest competence levels) and paraphrasing skills (M=4.90 with 34.3% reporting good, and 34.3% very good competence) were the areas in which the STs' perceived competence levels were the highest not only within the category of reporting but also of all the items they evaluated themselves on.

Table 4.
Reporting Educational Research

Competency Indicator	*f*	Negative	Positive	Mean	Median	Mode
18. knowledge about the components of a research report	*n*	19	51	4.23	4.00	5
	%	27.14	72.86			
19. skills in doing a database search for relevant research literature	*n*	21	49	4.14	4.00	5
	%	30	70			
20. skills for writing a proper literature review	*n*	22	48	4.03	4.00	4
	%	31.42	68.58			
21. skills in citing sources for relevant research	*n*	9	61	4.67	5.00	6
	%	12.85	87.15			
22. skills in paraphrasing	*n*	8	62	4.90	5.00	5 and 6
	%	11.42	88.58			
23. skills in using the APA style in writing a research report	*n*	16	54	4.64	5.00	6
	%	22.86	77.14			

Looking closer into the general picture outlined by the quantitative results, the qualitative survey illustrated individual differences in the STs' perceived competence in designing, conducting, and reporting research. For example, four STs claimed that they felt successful in all stages while the rest (n=5) expressed their lack of competency at certain ones. For example, ST8 reported that:

> *I do not feel so competent about designing qualitative data collection instruments. I know how to use questionnaires, but for interview, for instance, I just did it with four participants. Thus, I am less experienced (….) For reporting, I feel more competent than the other stages, but I am not very good at commenting on the statistical results since we did not deal with it in any courses.*

ST6, on the other hand, noted that "designing is the most difficult stage" for her, ST5 expressed that she would not be able to develop a questionnaire on her own, she needed help about SPSS, and "giving references in some situations are challenging" for her.

When it comes to how teacher educators perceived their STs' research competency, four out of six estimated that nearly two-thirds of the graduates had the necessary knowledge and skills to do research while TE1 and TE5 thought it was only one-third of the STs that were competent enough. On the other hand, teacher educators agreed that STs receive relatively better education in research compared to the STs at other ELTE programs. TE6 and TE3 thought that the STs engaged in enough research in this context. This is also verified by the graduates, for instance by G4, who compared the research context to the others and stated that: "in my opinion, it was sufficient for us. For example, while my friends from another university had no idea about using the SPSS program for research, we did our work on our own via this program". To G6, however, their competencies were "not sufficient, [as] one class is not enough for gaining research skills".

When graduates looked back on their ITE experiences, they commented that developing research competency was individual-based. According to G9, this was due to different attitudes: "There were few numbers of people who really appreciated research tasks and the rest treated them as 'just assignments', so I don't think that the majority of STs, at least the ones I know, possess those 'fancy' research skills".

Research in ITE Context

The responses from nine STs illustrated that nearly every ST appreciated the role of research in ITE. They expressed that through research, their skills like problem-solving, writing, and analytical thinking improved. They became more knowledgeable about the field of language teaching, and research enhanced their academic and professional development. For instance, ST3 claimed that "when we learn how to conduct research, I think that we make our previous learning more meaningful because now we know what it is like to come up with theories, research results, etc.". In a similar way, ST7 said that:

> *I think it is important to know how to do research since teachers can develop themselves with the help of research. Therefore, the students should be aware of the components of research, and its implementation. In our future career, we can also contribute to the field with our own research so we should at least learn research.*

Similarly, all teacher educators agreed on the fact that research held a very significant position for STs since it would enable professional development and help them to find solutions in their classes when they start teaching. TE1 stated that "doing research for a teacher is very significant. STs should look for ways of professional development because, in two years after graduation, they run out of these fresh skills which could make them very efficient." TE4 also noted that they could be producers of their own knowledge, stating that:

> *I believe that it is important for a student teacher to know research methods and do research because if she is able to do research, when she identifies a problem, she can find solutions to the problem on her own. If she doesn't know about research, then she will look for answers outside, she will wait for other people's help.*

Some teacher educators questioned the role of research in the sense that understanding of research in their context did not serve for teaching but encouraged student teachers to pursue an academic career. This is in line with 50 STs (out of 70) reporting that they wanted to continue in the academic path. While TE2 put emphasis on the current fourth-year STs' academic orientation: "I find the senior students overall too academic-oriented, this makes me question our aim, our aim is to educate teachers", TE5 claimed:

> *I think that academic-oriented student teachers who have intentions of doing MA or PhD enjoy research in this department, they present their studies at conferences because it is a prestigious thing to write [them] in their CVs or it is like a pre-condition for an MA degree. They are enthusiastic about research because of their academic orientation. I am not sure that the program conveys the idea that teachers can do research, they [can] improve themselves through research.*

One graduate (G9) also put emphasis on the content of the research studies, underscoring that the research they conducted was for the linguistic courses, not for teaching-related courses:

> *Building research skills and developing an awareness of key linguistics issues were prioritized in the context where I studied ELTE as an undergraduate student. The focus was, as implied, on linguistics issues, so I did not conduct any study as part of my professional educational (e.g., methodology courses, practice teaching, school experience, educational psychology) course requirements.*

As G9, TE2 and TE5 highlighted, this led the students to think of research and teaching as different worlds. For instance, G8 wrote "I think it was important as most of the students graduating from this department choose to be an academician instead of being a primary school teacher at a state school". Similarly, four graduates believed that research was important because most of the graduates chose an academic career and pursued or wanted to pursue an MA degree. From another perspective, G2 and G6 regarded the role of research as not so influential since there was only one research-focused course, and this was not satisfactory to engage them in research. This is also voiced by ST8, who believes research "is given less significance than I think it deserves. We have only one research course in which we can conduct our own research". One graduate, G5, believed that, considering her current working environment, a state school in the eastern part of Türkiye, her research activities as a student teacher had been "useless [as she was] just very busy trying to be a good teacher" at a school without electricity. She concluded: "Researching seems too utopic right now".

Teacher educators, TE2 and TE5, noted that research was missing in current teacher education programs all over Türkiye, the common curriculum did not facilitate discovery learning and that teaching was not considered as an intellectual job. TE4 compared it to the other departments in Europe and reached the conclusion that there was not a sufficient amount of undergraduate research engagement in ITE. TE3 expressed:

> *Maybe we (teacher educators) don't assign research tasks as many as we want because of time restriction or workload, yet we (in our context) are more-research oriented than other universities, we are far better, there is a clear difference, we enable student teachers to do research.*

When teacher educators were requested to comment on research elements of the courses they offered, each instructor touched upon various issues. For instance, TE1, TE2, and TE5 said that in practicum courses, STs were engaged with small-scale research without a review of literature or designing data collection tools. They used already existing observation tasks and collected data. TE3 and TE4 expressed that in nearly all linguistics-related courses they taught, they tried to assign student teachers a research task with stages of literature review, designing a tool, analyzing, and reporting. TE5 also said that she taught the APA style, citation and paraphrasing in writing courses. They also added that they required STs to read research articles in the methodology courses and integrate research articles from certain language teaching journals into other courses as the course material. TE1 reported that she really wanted action research to be part of these courses.

Suggestions for Improvement

Student teachers provided very clear suggestions about how their research competency could be

enhanced. Eight STs agreed that one research course was not sufficient, and they suggested that this course should be divided at least into two: one for theory and one for application, one for quantitative research and one for qualitative research. Some suggested that the current research course could be supplemented by another course, "Advanced Research Paper Study" (ST4), so that before graduation they could write a fully-fledged paper. ST4 also offered that the third year is too late to study research, thus, research courses should be offered earlier. Other suggestions were designing a peer evaluation or peer review system so that they could read and learn about other studies in detail, and the involvement of research assistants in this process so that student teachers could have more assistance and feedback.

Like STs, graduates also offered that the research course is divided into two different courses, one for theory and one for application. They also highlighted that research should be integrated across the curriculum and that every course should include small-scale research assignments. One graduate (G9) advised that instructors should give up summative assessments:

> *I personally observe that students only care about summative assessment methods such as midterm and final exams. Instead, I believe the number of discovery and inquiry-based learning and assessment methods could be increased in order to raise more independent or self-directed learners, which is possible to achieve through assigning small-scale research tasks.*

Teacher educators agreed that research should be in all steps of teacher education. T3 also suggested that STs should write research papers in each course. Most teacher educators suggested that every course could have a research component, thus allocating 25% of the course for research, either reviewing the literature on certain topics or collecting and analyzing data.

Teacher educators also suggested department-wise poster presentations. TE5 believed these assignments could create a collective research community through which "both teacher educators and STs would know who studied on what". The other frequently mentioned possible way of improving research competency was encouraging STs to attend conferences. Teacher educators put emphasis on the positive influence of undergraduate research conferences on STs' improvement.

Two graduates also agreed that instructors should encourage STs to attend conferences, G7 wrote: "student teachers should be given the chance to experience the implications of their research - through presenting their work at conferences, participating in workshops or publishing in journals". Similarly, G8 put forward that the department should have poster-presentation sessions: "I think at the end of the year teachers might also prepare an in-house workshop in which students can present their studies and share their research". G2 suggested that there should be a compulsory research project before graduation: "a compulsory project just like practice teaching which requires students to conduct research before graduation in small groups".

In addition to attending academic events, graduates and teacher educators highlighted the need for action research and classroom research in the curriculum. G6 noted that "action research and classroom research should be emphasized in the classes and integrated across the curriculum". TE3 believed in the value of teaching action research to STs: "it is high time to introduce action research to STs as it is one of the basic needs of a teacher", and she highlighted that the instructors should integrate teaching and application of action research in methodology courses. TE1 also suggested that action research should be either a part of practicum courses or it could be offered as an elective course.

DISCUSSION AND CONCLUSION

The quantitative self-report data revealed that STs perceived themselves mostly competent at designing, conducting, and reporting educational research projects. In all three research stages, more than half

positively rated their research knowledge/skills. They considered their research competency relatively good. They regarded themselves as most competent at 1) reporting, 2) designing and 3) conducting research, in relative order.

It might be inferred that some components of the ITE program have an influence on students' perceived competence. To illustrate, two writing-focused courses in the first year may drive STs to consider themselves more successful at the writing part. In these courses, the instructors tend to touch upon academic writing and teach citation, summary and paraphrasing, as attested by one of the interviewed teacher educators. This may also explain why STs evaluated their skill in paraphrasing as the most successful.

Although conducting research emerged as the stage in which STs felt least competent, all the items in this category were still rated positively as well. About the items especially on quantitative and qualitative analytical procedures and conducting experimental research, STs evaluated themselves as relatively limited. On the other hand, the items on conceptual understanding—e.g., on validity, reliability, qualitative and quantitative paradigms, which are relatively easier to comprehend through lectures or reading assignments—appeared as the items in which STs dominantly felt competent. This might be also explained by the fact that instructors are actively involved in the designing and reporting phases, whereas STs do not receive assistance from the instructor during the research, i.e. in conducting stage, in which they often work individually or in pairs. This situation may have negatively influenced their perceptions. Conversely, the research design is the stage where the instructors provide feedback to the STs most. Therefore, it may be the reason why STs regard themselves as relatively more competent at design. Similarly, Ugalingan et al. (2022) point to the need for support and assistance throughout the research process and how it positively affects STs' self-efficacy beliefs in their study in an ELTE context in the Philippines. Hence, taking into consideration our participants' suggestions as well, we suggest that STs should be scaffolded in each stage as much as possible to boost their self-efficacy.

Another interesting finding was that STs rated themselves in identifying a problem in a teaching-related context and in formulating appropriate questions as relatively less competent than in theoretical understanding of research (concepts of validity, reliability, and designs). Again, although overall evaluation was always positive, this raised the question of the extent to which STs could relate research to teaching. As Cochran-Smith et al. (2009) argue, successful STs have their own research questions and see the strong link between inquiry and teaching, thus developing a real ownership of the profession.

The role and importance of research in the teacher education program were acknowledged and appreciated by nearly all participants. STs expressed the need for research to improve their skills in problem-solving and analytical thinking, in addition to the benefits of improved academic and pedagogical understanding. Teacher educators also agreed that it enables professional development, as suggested by Atay (2008), and has a positive impact on STs. The remarks of the teacher educators in our context resonated with various international insights, for example, the idea that research skills would help STs be producers of their own knowledge (as suggested by Rust, 2009) and develop power and authority over their experiences (as suggested by Bullock, 2016). The teacher educators also believed that these desirable outcomes would, in turn, pave the way for STs to gain ownership of teaching-related research problems and questions (Cochran-Smith et al., 2009).

When Reis-Jorge's (2005) duality of approaches to integrate research in ITE programs, namely the academic and/or professional development orientations, is reconsidered, our case seemed to fall into the first academic perspective. This is clearly observable in and justified by our quantitative results as well, in which STs reported remarkably higher perceived competencies for understanding the concepts of validity and reliability while rating their competencies lower in formulating questions, conducting and analysis. Reminding that ST and teacher educator views do not always match (e.g., van Katwijk et al., 2021), the teacher educators in our study reported integrating "research components" into practicum via classroom observation tasks, which are small scale-research without designing and reporting stages; such applications can be labelled as "professional orientation" at first sight. However, most of the

research integration in other courses, reported as teaching academic writing conventions or integrating research articles as reading materials, is still in line with the linear approaches to research, and therefore would still be labelled as an academic orientation by Reis-Jorge (2005). In addition, perceptions of STs and graduates also reinforce the inference that academic orientation is dominant in this context, attested by the fact that the majority of STs wanted to earn an MA. This is also the point where individual differences come under the spotlight. As the career aspirations differ, the STs' attitudes towards research, motivation and - not surprisingly - perceived competence levels varied as a result.

Furthermore, we infer that the conception of research in our context, which pointed to academic orientation, leads to an understanding that research is not for teachers. STs and graduates related research mostly to academic life and could not relate it much to teaching; instead, they think of research and teaching as different worlds. STs with academic orientations were more interested in research and thought of research as something necessary for academics. However, in this ELTE context, STs having the intention to teach reported that they lost interest in research, as they found conducting research "utopic" for a teacher. This might be due to the STs' understanding of research being enhanced with an academic orientation in this context, resulting in STs thinking of research as necessitating complex statistical procedures and large numbers of people, therefore not a teacher's job (Borg, 2009) or something "done on teachers rather than by teachers" (McKay, 2009, p. 286). Nevertheless, through the introduction of inquiry-based practices (Fichten, 2019) in the ITE curriculum, the attitudes of prospective teachers can change (Akyel, 2015; Guilbert et al., 2016).

Although STs vary in their career orientations and motivation, the suggestions by most participants regarding increasing research competency are centred on more research engagement. All participants suggested curricular and extracurricular improvements, such as additional courses, formative assessment through inquiry-based approaches (van Katwijk et al., 2021), integration of research across curriculum, and different platforms to share and discuss ST research. Collaboration and dissemination in this sense were also cited by Borg's (2006) among the necessary conditions for teacher research.

Although ITE programs have already crowded curricula (van Katwijk et al., 2021), the findings suggest that the stakeholders in this study context are willing to welcome a possible increase in their workload. As their remarks on the role of research in ITE already outlined, they found ST research engagement a prerequisite to successful professional development. All these suggestions once again accentuated the dominance of academic orientation in the context, manifested by the STs asking for department-wise conferences or peer reviews so that they have a platform to share, discuss and learn about the findings of peer research.

The graduates and teacher educators also suggested department-wise poster sessions and attending conferences for professional development, strengthening our inference that the program was academically oriented. However, the orientation of their suggestions also included linking research to teaching, for instance by using inquiry-based formative assessment in all courses or promoting action research. Both graduates and teachers referred to the lack of opportunities to engage in teaching and action research and highlighted that they see action research as the venue where the STs would discover and internalize that research and teaching are in fact closely related, and that action research "is one of the basic needs of a teacher" as stated by one of the participants. Similarly, previous research conducted with STs found that conducting action research helps STs develop an understanding of research in and for teaching (Akyel, 2015; Ulvik & Riese, 2016; White et al., 2016).

Finally, van Katwijk et al. (2021, p. 12) notes that "the formal way in which preservice teacher inquiry is taught and assessed should be changed into a clearer teaching–learning trajectory". Based on our findings, we suggest that action research should be integrated into the ITE curriculum for STs to be able to link teaching with research, STs should be familiarized with inquiry-based practices early, so that their conceptions, perceptions, and attitudes towards research can change (Guilbert et al., 2016; van der Linden et al., 2015), and they start to conceptualize research as an integral part of teaching.

This study aimed to investigate student teachers' perceived competence in designing, conducting, and reporting educational research along with graduates' and teacher educators' opinions and suggestions regarding research in an initial ELTE context in Türkiye. We observed that STs perceive themselves to be competent in research, which is also acknowledged by graduates and teacher educators as well. The participants highlighted the importance of research, however, with some reservations that the context was too academically oriented and that they needed to introduce the inherent link between teaching and research. For this, various suggestions were presented and discussed, and we conclude that introducing action research is a feasible way to address and embrace all the diverse orientations, interests, and motivations in our case.

We intended to represent all the diverse voices of the participants in our paper, to the discussion of which we have also introduced our insider perspective. Although the profile of graduates proportionately represents the academic and teaching pathways, a higher number of graduates as participants would have helped in developing further insights into the research competencies the STs could gain before graduation, the importance and value of research in the ITE context, and practice-informed suggestions. Therefore, we believe further studies can be conducted with more graduates, especially with the graduates who were participants of this particular study and are now well into their professional careers, to explore these issues and draw further conclusions. As the data pointed out, the curriculum of the ITE program this study focused on did not have any components related to action research, and it was bounded by the HEC when this study was conducted. Now the situation has changed for the ITE programs in this local context as they recently gained autonomy. Not only locally, but also on account of the trends in international teacher education literature, future studies might investigate the role of research and any potential space for action research to welcome and accommodate inquiry-based approaches in initial teacher education.

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APPENDICES

Appendix 1: Qualitative Survey Questions for STs

1. What is the role of research in this ELTE program? Do you think it is important for student teachers to conduct research? Why/why not?
2. Do you think that the program engages student teachers with research? Please provide your justifications for the answer.
3. To what extent does the program achieve its outcome "The graduates of this department will be able to "Individually and collaboratively design, conduct, and report small-scale educational research projects by employing relevant research methods in the investigation of language with teachers from local, national or international contexts."? Please provide your justifications for the answer.
4. In which courses are you engaged with educational research? Do you think it is sufficient?
5. Do you feel competent at designing, conducting and reporting research? Why/ Why not? Please provide your justifications for each stage of doing research (1: designing, 2: conducting and 3: reporting).
6. What should be done to improve your competency in research? What are your suggestions for the program?

Appendix 2: Qualitative Survey Questions for Graduates

1. What was the role of research in the ELTE program you graduated from? Do you think it was important for student teachers to conduct research?
2. Do you think that the undergraduate program engaged student teachers with research? Why/why not?
3. To what extent did the program achieve its outcome "The graduates of this department will be able to "Individually and collaboratively design, conduct, and report small-scale educational research projects by employing relevant research methods in the investigation of language with teachers from local, national or international contexts."?
4. In which courses were you engaged with educational research? Do you think it was sufficient? Why/why not?
5. Do you feel competent at designing, conducting and reporting research? Why/ Why not?
6. What should be done to improve student teachers' competency in research? What are your suggestions? What should the department do to improve student teachers as well as its graduates' research competency?

Appendix 3: Interview Questions for Teacher Educators

1. What is the role of research in this ELTE program? Why is it important for student teachers to conduct research?
2. To what extent does the program engage student teachers with research?
3. To what extent does the program achieve its outcome "The graduates of this department will be able to "Individually and collaboratively design, conduct, and report small-scale educational research projects by employing relevant research methods in the investigation of language with teachers from local, national or international contexts."?
4. In which courses do you think student teachers are engaged with educational research? In which courses should they get engaged with it?
5. Do they conduct research in your courses?
6. To what extent are they competent at designing, conducting, and reporting research?
7. What do you think about student teachers' perceptions towards educational research?
8. What are the points that need to be considered to improve student teachers' competency in research? What are your suggestions?

TÜRKÇE GENİŞLETİLMİŞ ÖZET

Bologna süreci ile birlikte üniversite eğitimi öğretmen adaylarının bilgiyi aktif bir şekilde yapısallaştırdıkları ve kendi uygulamaları üzerinde yansıtıcı düşünebildikleri sorgulamaya dayalı öğrenme biçimini öğretmen adaylarına kazandırmayı hedeflemektedir. Bu nedenle öğretmen yetiştirme programlarının müfredatlarında araştırma becerilerini geliştirmeye yönelik dersler yer almaya başlamıştır.

Bilimsel araştırma becerilerinin öğretiminin öğretmen yetiştirme programlarında iki farklı yönde şekillendiğini görmekteyiz. Birinci yön, öğretmen adaylarının bilimsel araştırma becerilerini geliştirmek ve onları akademik çalışmaları okuma ve anlamaya hazırlamaktır. İkinci yön ise öğretmen adaylarına mesleki gelişimleri kapsamında yansıtıcı düşünme pratiklerini öğretmek ve hayat boyu öğrenme kapsamında araştırma yapma isteğini artırmaktır. Genelde Türkiye'de ve uluslararası araştırmalarda ikinci yöndeki araştırmaların daha yoğun olduğu gözlenmiştir. Alanyazında öğretmen adaylarının öğretmenlik uygulaması derslerinde gözleme ve uygulamaya gittikleri okullarda eylem araştırması yaptıkları birçok çalışma bulunmaktadır. (Akyel, 2015; Crawford-Garrett vd., 2015; Ulvik & Riese, 2016; van Katwijk vd., 2021; White vd., 2016). Ancak İngilizce öğretmenliği programında eğitim gören öğretmen adaylarının eğitim araştırmaları yeterlikleri ile ilgili öz algıları yeterince araştırılmamıştır. Bu sebeple Türkiye'de araştırma kültürünün ve sorgulamaya dayalı öğrenmenin yaygın olduğu önemli bir devlet üniversitesindeki Eğitim Fakültesi son sınıf öğrencilerinin araştırma tasarlama, uygulama ve raporlama aşamalarındaki öz yeterlikleri araştırılmıştır. Araştırma soruları aşağıdaki gibidir:

Araştırmanın yapıldığı İngilizce öğretmenliği programında öğretmen adayları, program mezunları ve öğretmen eğitimcilerine göre:
1. Öğretmen adayları bilimsel araştırma tasarlama, uygulama ve raporlama aşamalarında ne kadar yeterlidir?
2. Bilimsel araştırmanın rolü nasıl algılanmaktadır?
3. Öğretmen adaylarının bilimsel araştırma yeterlikleri nasıl geliştirilebilir?

Öğretmenlik mesleği öğretmenlerin sürekli öğrenmesini, karışık ve hiç beklenmedik sorunlara çözüm üretmelerini, değişik koşullara uyum sağlamalarını gerektiren bir meslektir. (Darling-Hammond & Bransford, 2005; van Katwijk vd., 2021). Bu nedenle de öğretmenlerin dışarıdan gelen bilginin direkt tüketicisi olmaktansa kendi bilgilerini kendilerini üretmeleri önemli bir öğretmen yeterliği olmuş (Rust, 2009). Öğretmen adaylarının araştırmacı olarak yetiştirilmeleri gerektiğinin altı çizilmiştir (Bullock, 2016). Alanyazındaki çalışmalar öğretmen adayları tarafından araştırma yapmayı öğrenmenin, verimli bir mesleki gelişim pratiği olduğunu, yansıtıcı düşünmeyi öğrettiğini, öğretim sürecinin kalitesini artırdığını ortaya koymuştur. Hizmet öncesi eğitimde araştırma yapmak öğretmen adaylarının araştırmaya karşı tutumlarını olumlu etkilemiş ve bu durumun öğretmen olduklarında araştırma yapma olasılıklarını artırdığı saptanmıştır (Akyel, 2015; Guilbert vd., 2016). Araştırmanın sadece öğretmenler üzerinde yapılan bir eylem olduğu algısının hizmet öncesi eğitimle değiştirilebileceği öne sürülmüştür (McKay, 2009, p. 286). Bu bağlamda araştırma becerilerinin öğretmenlerin eğitimindeki bu rolü göz önünde bulundurularak bu araştırmada öğretmen adaylarının kendi becerileri ile ilgili algıları, öğretmen eğitimcilerinin, program mezunlarının ve yine öğretmen adaylarının programdaki bilimsel araştırmanın rolü ile görüşleri ortaya konulacak ve son olarak da öğretmen adaylarının araştırma becerilerinin geliştirilmesi ile ilgili fikir ve önerileri sunulacaktır.

Bu karma yöntemli durum çalışmasında kolayda örneklem yöntemi kullanılarak toplam 85 katılımcıdan (70 öğretmen adayı, 9 mezun ve 6 öğretmen eğitimcisi) veri toplanmıştır. Araştırmanın geçerliği ve güvenirliğini artırmak için farklı paydaşlardan veriler toplanmıştır. Veri toplama araçları öğretmen adayları için araştırma yeterlikleri üzerine anket (White vd., 2016 çalışmasından adapte edilmiş), açık uçlu anket, mezunlar için tasarlanmış açık uçlu ikinci bir anket ve öğretmen eğitimcileri ile sözlü görüşmelerinden oluşur. Veri analizinde nicel veriler SPSS programında analiz edilmiş, nitel veriler ise içerik analizi yolu ile analiz edilmiştir.

Araştırmanın sonuçları öğretmen adaylarının araştırma tasarlamada, uygulamada ve raporlamada kendilerini yetkin olarak değerlendirdiğini göstermiştir. Öğretmen adayları kendilerini göreceli olarak 1) raporlama 2) tasarlama 3) uygulama konusunda en yetkin olarak görmüşlerdir. Raporlama konusunda kendilerini en yetkin olarak görmelerinin nedeninin eğitim aldıkları programdaki akademik yazıma yoğunlaşan yazma derslerinin olabileceği araştırma katılımcılarından olan öğretmen eğitimcileri tarafından ifade edilmiştir. Araştırma tasarlama aşamasının da öğretmen adaylarının dersin öğretim elemanından dönüt aldığı bir süreç olduğu katılımcılar tarafından belirtilmiştir. Öğretmen adaylarının araştırma becerilerini uygulamayı diğer araştırma aşamalarına göre daha düşük olarak değerlendirmesinin sebebi ise uygulama aşamasında akranları ile ya da yalnız olarak çalışmaları olarak tahmin edilmektedir. Bu sonuçtan yola çıkarak araştırmanın her aşamasında öğretmen adaylarının gerekli dönüt ve yardımı almaları gerektiği bu sürecin öğretmen adayların öz yeterliklerini geliştireceği iddia edilebilir.

Diğer bir sonuç ise öğretmen adaylarının kendilerini araştırma sorusu belirlemede araştırmanın kuramsal konularını anlamaya göre (geçerlik ve güvenirlik kavramlarını anlama gibi) daha az yetkin görmeleridir. Öğretmen adaylarının kendilerini genel olarak yetkin olarak görmelerine rağmen araştırma sorusu yazmada daha az yetkin gördükleri de araştırma sonucunda ortaya çıkmıştır. Bu sonuç da öğretmen adaylarının kuramsal bilgiyi uygulamaya yansıtmada sorun yaşadığını göstermektedir.

Programda araştırmanın rolüne bakıldığında genelde akademik yönelimin daha baskın olduğu katılımcılarca belirtilmiştir. Ayrıca araştırmaya katılan öğretmen adaylarının çoğunun mezuniyet sonrası yüksek lisans yapmak istemesi de bu sonucu destekler bir veridir. Program mezunu olan ve öğretmenlik yapan katılımcılar da araştırma yapmanın akademisyenlerin işi olduğunu, öğretmenler için araştırma yapmanın ütopik olduğunu belirtmişlerdir. Alanyazında bu yargıların ancak sorgulamaya dayalı öğrenmenin yaygınlaştırılması ile dönüştürülebileceği ortaya konmuştur.

Katılımcılar öğretmen adaylarının araştırma yeterliklerini geliştirmek için müfredatta araştırmaya yönelik dersler konulması, sorgulamaya dayalı öğrenme yaklaşımı bağlamında ölçme ve değerlendirmenin araştırma pratiklerini içermesi, öğretmen adaylarının araştırma aktivitelerinde daha fazla bulunması gibi önerileri dile getirmişlerdir. Öğretmen adaylarının akranları ile daha fazla işbirliği yapması ve farklı platformlarda yaptıkları araştırma sonuçlarını yayma fırsatlarının onlara tanınması da öneriler arasındadır. Araştırma ve öğretme arasındaki güçlü bağın öğretmen adaylarına uygulamalı olarak gösterilmesi için eylem araştırmasının öğretmen eğitimi müfredatında daha fazla yaygınlaşması da öne sürülen tavsiyeler arasındadır.