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Learning How to Conduct Educational Research in Teacher Education : a Turkish Perspective

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Learning How To Conduct Educational Research In Teacher Education: A Turkish Perspective

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Abstract: This paper examines the attitudes of student teachers in social studies towards an educational research assignment, undertaken in an educational research methods course given at the Fatih Faculty of Education at Karadeniz Technical University, Turkey. A questionnaire containing open-ended questions and an interview were used in the data-collection process of this research. 74 student teachers answered the questionnaire; 20 of these teachers were selected for interview through a random sampling method, and they then participated in a semi-structured interview. In the light of the data, it can be said that the majority of student teachers gained basic educational research skills as a result of the course, and specifically learned how to conduct a small-scale research project. By conducting a small-scale education research project and writing a report on it, student teachers learned important educational research skills, such as how to detect problems, construct hypotheses, review literature, select a suitable research methodology, choose data-collecting instruments, gather and analyse data, cite references and write up an educational research project.

Introduction

Teachers are one of the most important elements in the education system, and their responsibilities in schools extend beyond simply implementing and delivering the curriculum: they also need to know how to recognise and solve problems that may arise within the classroom when they deliver the curriculum (Davies, 1995). Besides this, a qualified teacher should be aware of, and be able to respond to, the direction of new developments in teaching (Lewis and Munn, 1997). In other words, in the modern world, effective teaching requires that teachers engage in educational research in order to improve the standard of their teaching. At the present time, and especially in developed countries, teachers are expected to follow and implement educational research findings in order to increase the quality of their teaching, and to solve problems that come up in their schools (Mortimore, 2000; Everton, Galton and Pell, 2000; Brown and Sharp, 2003).

There has recently been an increase in the quantity of research conducted by teachers in schools as a consequence of the Action Research approach (Brooks and Sikes, 1997), which is one way of carrying out educational research in the classroom. In the literature there are different definitions of Action Research. For example:

> *Action research is simply a form of self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of these practices, and the situations in which the practices are carried out.*

(Carr and Kemmis, 1986: 162)

Another definition of Action Research is made by Ebbut (1985, cited in Hopkins, 1996: 45).

> [*Action Research*] *is about the systematic study attempts to improve educational practice by groups of participants by means of their own practical actions and by means of their own reflection upon the effects of those actions.*

Further to the above definitions, Mills (2003: 5) defined Action Research as follows:

> *Action Research is any systematic enquiry conducted by teacher researchers, principals, school counselors, or any stakeholders in the teaching\learning environment to gather information about how their schools operate, how they teach, and how well their students learn.*

Through Action Research activities, participants aim to examine their own educational practice systematically and carefully. Besides this, Action Research is about the nature of the learning process and the link between practice and reflection (Winter, 1996, cited in Zuber and Skerritt, 1996), and aims to improve practice rather than to produce knowledge (Elliot, 1996). In addition, this type of research "is concerned with diagnosing a problem in a specific context and attempting to solve it in that context" (Cohen and Manion, 1997: 186). In other words, through Action Research teachers investigate their own practices and work places in order to make beneficial changes, and systematically analyse their own teaching and their students' performance (Capel, Leask and Turner, 1997; Bassey, 1999). Action Research is popular with researchers running small-scale projects (Blaxter, Hughes and Tight, 1996), because it enables teachers to reflect on and evaluate different aspects of their work and so perform better as teachers (Kyriacou, 1992).

Action Research can also be used for different purposes, such as school-based curriculum development, school improvement, professional development, educational research, system planning, school organisation, staff development, evaluation and the democratisation of the workplace (Carr and Kemmis, 1986; Elliot, 1996; McNiff, Lomax and Whitehead, 1996; Grundy, 1994). Besides this, it should be noted that, according to Grundy (1994: 28-29), Action Research challenges certain traditional assumptions about teaching.

- Action Research challenges the notion of the separation of research from action
- Action Research challenges the separation of the researcher and the researched
- By bringing together 'research' and 'action' and the 'researcher' and the 'actor' (or practitioner), Action Research challenges assumptions about the control of knowledge
- By recognising the importance of social and contextual change as well as change in individual practice, Action Research challenges assumptions about the nature of educational reform.

In schools, Action Research activities are mainly focused on improving teaching and involving students in learning (Carr and Kemmis, 1986). Action Research works to support improvements in three main areas: improvements in practice; improvements in understanding that practice by its practitioners; and improvements in the environment in which the practice takes place (Carr and Kemmis, 1986). Problems can be easily detected through Action Research activities, and the quality of teaching and learning can be increased in the light of

that research. Analysis of Action Research activities reveal that there they confer many benefits, which can be listed as follows.

- Helps solve classroom problems
- Encourages effective changes
- Revitalizes teachers
- Empowers teachers to make decisions in their classrooms
- Identifies effective teaching and learning methods
- Promotes reflective teaching
- Promotes ownership of effective practices
- Verifies what methods work
- Widens the range of teachers' professional skills
- Provides a connection between instructional methods and results
- Helps teachers apply research findings to their own classroom
- Enables teachers to become change agents

(Source: Reading/Learning in Secondary School Subcommittee of the IRA, 1989, cited in Henson, 1996: 56)

Through Action Research, teacher-researchers can scrutinise their teaching environments and respond to teaching problems in a scientific way. This situation provides them with many advantages. First, teachers become aware of the problems in their schools, and can easily identify these problems themselves. Second, teachers do not suffer anxiety if their colleagues monitor their teaching as a part of a research project. Third, teachers will readily collaborate with their colleagues as part of an ongoing research project (Watts, 1985).

At this point it would be useful to say a word or two about the competence and skill levels of those teachers who want to carry out research. As mentioned above, when conducting Action Research activities in schools, teachers are an important element of that research. To conduct a successful Action Research project, therefore, teachers should have a reasonable degree of competence and possess the appropriate skills. First, teachers should have enough knowledge, competence and experience in Action Research itself. Second, they should possess listening skills, language skills and management skills, and be adept at collaborative work (McNiff, Lomax and Whitehead, 1996). Besides this, teachers should bring everyone who is implicated in the research into the Action Research project (McNiff, Lomax and Whitehead, 1996).

Action Research in Teacher Education:

Action Research has been divided into three types: technical; practical; and emancipatory or critical (Habermas, 1971; Grundy, 1987; Carr and Kemmis, 1986; Zuber-Skerritt, 1996a).

Technical Action Research

Technical Action Research, which is based on experience and observation, is positivist and predictive, and tries to control human situations through rules based on empirical laws. The purpose of this research is to discover the laws underlying reality (Grundy, 1982) and to improve the effectiveness of educational and managerial practice (Zuber-Skerritt, 1996a). In

this type of Action Research the problem is defined in advance, and attempts are then made to solve it through experience. Events are explained in terms of real causes and simultaneous effects (Grundy, 1982). The nature of the collaboration between the researcher and the practitioner is technical and facilitatory. Technical Action Research is associated with the natural sciences.

Practical Action Research

The aim of Practical Action Research is to understand teaching practice and solve immediate problems. This type of Action Research is associated with the historical and hermeneutical sciences, and so presumes that the meaning-making in a given situation is interpretative and deliberative (Grundy, 1987). Besides this, it aims to facilitate the practitioners' understanding and professional development (Zuber-Skerritt, 1996a). It aims towards generating understanding, and focuses on human interpretation, interactive communication, deliberation, negotiation and detailed description (McKernan, 1991).

Emancipatory or Critical Action Research

Critical Action Research is also called 'emancipatory', because of its goal to achieve liberation through knowledge gathering (Mills, 2003). The name itself comes from critical theory and the critical sciences (Mills, 2003). The purpose of this type of Action Research is to make a connection between Action Research and social mobility (Grundy, 1982). Critical theory emerges from the work of Marx and Freud, and from the traditions of the Frankfurt School of Philosophy – in particular, the writings of Jürgen Habermas (Hopkins, 1996). The central purpose of critical theory is emancipation, which enables people to take control and direction over their own lives (Hopkins, 1996). Furthermore, according to Zuber-Scerritt (1996b: 84-85):

> More precisely, action research is emancipatory when it aims not only at technical and political improvement, the participants' transformed consciousness, and change within their organization's existing boundaries and conditions, but when it also aims at changing system itself or those conditions which impede desired improvement in the organization.

Emancipatory Action Research also provides important benefits to educational research. According to the tenets of this type of Action Research, educational research should aim to be socially responsive, democratic, equitable, liberating and enhancing (Mills, 2003).

As mentioned above, teachers ought to know about educational research, because high quality new ideas to enhance teaching and learning come from disciplined educational research. Besides this, it can be said that learning is an individual issue, and each student has his or her own particular learning style. For this reason, as teachers are expected to implement the same curriculum programme in all classrooms, they may encounter problems that arise because of the different learning styles of their students, and teachers should know how to recognise and solve them through educational research. Finally, teachers who know the latest educational research can understand and implement the results of such research, which will have been determined by professional researchers. In sum, teachers who are competent in educational research can easily recognise teaching problems that arise in their classrooms, can solve these problems once they have detected them, and can successfully implement the results of educational research carried out by professional researchers.

The Action Research process involves several different steps, which include identification of the problem, collection of data, analysis of data, and decision-making about a course of action based on data analysis and reflection. Student teachers should learn these steps during the teacher education process. Besides this, they should be given opportunities to conduct their own Action Research project before becoming a teacher in a school. At this point it should be noted that Action Research can teach student teachers the skill of being reflective, a finding that is in line with the study of Bullough & Gitlin (1995). These researchers claim that in the teacher education process, student teachers should be taught how to become critical, reflective teachers (Bullough & Gitlin, 1995). This is because, if students are not introduced to Action Research during their initial teacher training, they will never become involved in it (Kincheloe, 1991).

In developed countries, Action Research typically takes place in the context of a teacher education programme which is oriented toward reflective teaching practice (Zeichner and Gore, 1995). Research shows that Action Research contributes towards such a reflective teaching practice (Zeichner and Gore, 1995). Yet, although becoming a reflective teacher during the teaching process is important, it seems that some teachers are not required to engage in critical reflection in schools (Bullough & Gitlin, 1995).

When the importance of critical reflection is examined, it seems that it provides different advantages to different teachers. According to Brookfield (1995: 22-26) critical reflection is important for the following educational reasons:

- It helps people to take informed actions
- It helps them develop a rational practice
- It helps avoid self-criticism
- It grounds people emotionally
- It enlivens the classroom
- It increases democratic trust

Although critical reflection provides different advantages to different teachers, some teachers avoid critical reflection, for the following reasons (Brookfield, 1995). First, some teachers may face political and professional risks. Second, teachers may have a general lack of confidence. Third, some teachers fear being marginalized. Nevertheless, although some teachers find critical reflection troublesome, it is one of the most important tools for increasing the quality of teaching and learning in both teacher education and in schools.

Student teachers in social studies should be taught Action Research and be involved in it during the teacher education process, because there are a number of problems with social studies teaching in schools. According to Kincheloe (2001), social studies teaching has the following problems. First, social studies teaching is teacher-centered, and activities are based on the texts. Second, there is limited exercise of democratic values, and students are generally required to copy lecture notes. Third, students are not given the opportunity to adopt genuinely innovative practices. Fourth, teaching activities do little to challenge students' intellects. Finally, there is a lack of public awareness about social studies as a school subject. To overcome these problems, one of the most important vehicles that a social studies teacher can use is Action Research. Action Research is important for solving educational problems and for discovering new knowledge in order to increase the quality of education. Through Action Research, teacher researchers can understand their students and classrooms better. According to Kincheloe (2001), teachers can begin to look at how students produce knowledge.

Valuable research has been done to investigate the issue of educational research and student teachers in the teacher education process. For example, Brinkman and Van Rens (1999) carried out a qualitative research project to investigate the levels of competence of biology, chemistry, physics and German-language student teachers in educational research. By the end of this study, the student teachers who had participated in the research had acquired some crucial skills, one of which was the ability to formulate searchable research questions. Another study was carried out by Counsell, Evans, McIntyre and Raffan (2000) in order to develop student teachers' educational research skills, and they stated that subject-related educational research can play an important role in trainee teachers' learning. Another valuable research study, entitled "Research and Practice in History Teacher Education", was conducted by Pendry and Husbands (2000). In the light of this study it appears that, although student teachers have positive attitudes towards using research findings for their professional development, their familiarity with the data relevant to their field is limited (Pendry and Husbands, 2000). In another study, Hatch, Greer and Bailey described how pre-service teachers accomplished and wrote up Action Research projects. In this study, the researchers claimed that student teachers gained some basic research skills, such as how to evaluate literature critically, understand and appraise systematic data collection and solve classroom problems (Hatch, Greer and Bailey, 2006).

In Turkey, little research has been done into teachers' and student teachers' attitudes to educational research. In one study, Ekiz (2006) gathered data about the attitudes of 265 primary schools teachers towards educational research. In the light of his study it seems that, again, although teachers have positive attitudes towards educational research, they do not undertake it, through lack of time and appropriate conditions (Ekiz, 2006). Furthermore, Sozbilir (2007) examined the views of biology and chemistry student teachers on the value of undertaking small-scale research. In this study, the researcher claimed that student teachers gained a significant level of knowledge of research methods by undertaking small-scale research projects as part of the teacher education process.

Indeed, one of the best contexts for teaching educational research is during the teacher education process. For this reason, during the teacher education process student teachers should be taught how to conduct educational research. This view is supported by Bennet and Campel (2002, cited in Sozbilir, 2007); these researchers also claim that the majority of teachers only encounter educational research during the teacher education process. For this reason, teaching candidates should be taught about educational research and asked to undertake small-scale educational research projects during this time.

The Purpose of the Study

The main purpose of this study was to investigate student teachers' attitudes towards the small-scale educational research carried out by social studies student teachers in the Fatih Faculty of Education at Karadeniz Technical University in Turkey. Based on the main purpose of this study and the concerns discussed above, the following questions were developed.

1-What are the attitudes of student teachers about the value of small-scale educational research carried out by student teachers?

2-What kinds of educational research skills do student teachers gain by conducting small-scale educational research?

Procedures

Student teachers in social studies in the Fatih Faculty of Education at Karadeniz Technical University must take a research methods course, which runs for 15 weeks, with two hours' contact time per week, and focuses on educational research. In this course, students are expected to learn basic educational research skills (Higher Education Council, 2006) such as planning an educational research project, reviewing literature, selecting a suitable methodology and types of data, collecting and interpreting evidence and reporting findings. After the seventh week of the academic term, student teachers are also asked to prepare a small-scale educational research project to do with some aspect of social studies teaching in primary schools. During this process, student teachers are asked to organise themselves into groups, comprising two student teachers per group. Second, they are required to select a research topic relating to social studies teaching, and construct a hypothesis, and then all the student teachers must discuss their research topics and hypotheses in front of the class. Third, the student teachers must carry out their research and write up their studies. Fourth, each group must present the results of their educational research project in front of their classmates and the lecturer. Fifth, the lecturer of the research methods course evaluates each project, using the evaluation criteria for educational research projects developed with the guidance of Bell's book on research methods in education (1997 – see Appendix 2).

The student teachers' small-scale research project focused on seven main areas in social studies teaching: textbooks; teaching methods; the purpose of social studies teaching; attitudes of students towards social studies; history topics in social studies; geography topics in social studies; and political concepts in social studies. Throughout this small-scale research project, student teachers investigated different areas of social studies teaching at the primary level. When the research reports were examined, some valuable data appeared. The main results of the student teachers' reports are as follows.

- Social studies' textbooks are not interesting, and the majority of students are not happy with them
- The majority of social studies teachers use traditional teaching methods in social studies courses
- The majority of social studies teachers are not aware of the contemporary purposes of social studies teaching
- More than half of the students do not like social studies
- More than half of the students do not like the history topics on the social studies course
- The majority of students like the geography topics on the social studies course
- The majority of students do no know the political concepts in the social studies courses

The above results, which are based on the student teachers' research reports, reveal the main problems impeding the teaching of social studies in Turkey. Through this small-scale research project, the student teachers learned how to investigate problems in schools.

Methodology

A qualitative approach was used in this study in order to gather data in response to the research questions, and the information itself was secured through a questionnaire that contained open-ended questions, and through semi-structured interviews. The questionnaire was distributed in April 2007. The purpose of qualitative research is to develop an understanding of individuals and events in their context (Borg, Gall and Gall, 1993).

The first data-collection tool for this study was the open-ended questionnaire. Questionnaires are a good and efficient way of collecting information quickly and relatively cheaply. Researchers use questionnaires to gather information by way of different questions types: verbal; open; list; category; rank; scale; quantity; and grid (Bell, 1997). In order to get accurate information from respondents, researchers should aim to use clear and comprehensible questions. Questionnaires provide many advantages to researchers, some of which are: efficient use of time; anonymity; the possibility of a high return rate; and standardisation (Munn and Drever, 1996). Although questionnaires have their advantages, however, they also have the following limitations.

- The information collected tends to describe rather than explain why things are the way they are
- The information can be superficial
- The usefulness of the questionnaire is reduced if preparation has been inadequate

(Source: Munn and Drever, 1996: 5)

In this study, the researcher used open-ended questions to gather student teachers' ideas. Because the questions were open-ended, respondents were given the freedom to express their own ideas. Besides this, the aim was to obtain student teachers' ideas in their own words, expressed spontaneously, an approach supported by Oppenheim (1966).

The second data-collection tool used in this research project was the semi-structured interview. The interviewers aimed "to elicit self-reports of their opinions, attitudes, values, beliefs and behaviours" (Sproull, 1988: 161). The interview is one of the commonest and most flexible data-collection tools used in educational research (Drever, 1997). Through interviews, researchers can gather information in a face-to-face situation. There are three kinds of interviews which can be used in an educational research project: the structured or standardised interview; the semi-structured interview; and the unstructured interview. The use of the interview in educational research provides different advantages to researchers, such as the ability to gather information directly from interviewees, the opportunity for probing, the opportunity to clarify information and the opportunity to clarify complex information (Sproull, 1988). Although interviewing has its advantages in educational research, it also has some limitations, to which researchers have to pay attention. Some of the limitations of interviewing are the time taken in the preparation and analysis process and the possibility of collecting inaccurate data (Sproull, 1988; Drever, 1997). In this research, the researcher used a semi-structured interview to elicit comprehensive information from the student teachers.

Research setting and participants

In April 2007, questionnaires were distributed to 90 final-year social studies student teachers in the Fatih Faculty of Education at Karadeniz Technical University, and 74

questionnaires were filled out by student teachers. These questionnaires were returned to the researcher. 20 student teachers who filled out the questionnaire were selected for interview through a random sampling method, and then participated in a semi-structured interview. This procedure is supported by Verma and Mallick (1999).

In this study, the data-collection tools were the questionnaire and the semi-structured interview. The questionnaire contained 5 open-ended questions, some of which were developed based on questions used by Sozbilir (2007). The questionnaire is reproduced in Appendix 1. The same questions were used in both the questionnaire and the semi-structured interview, in order to evaluate the attitudes of the student teachers thoroughly. After preparing the questionnaire and organising the interview schedules, the second step was to set up a pilot study. The pilot study, which was carried out before administering the questionnaire and implementing the interviews, was arranged in order to highlight potential problems with the questionnaire and interviews, and it was submitted to 10 student teachers for their evaluation.

Following the pilot study, questionnaires were distributed, and interviews were conducted by the researcher. To analyse the data gathered from the questionnaire, the following procedure was used. First, the written data were read several times by the researcher, in order to familiarise himself with the content, and then a list was made of phrases taken verbatim from the responses. Next, the written data were transformed into numbers using SPSS (the Social Science Statistic Program), and the qualitative data were quantified.

During the analysis of the semi-structured interviews, the researcher listened to each tape several times, and also read the transcriptions a number of times. The analysis of the responses to the 'semi-structured' questions was summarised and classified according to the specific category of answers. The researcher then developed a set of categories and patterns in the light of the interview questions asked.

Credibility

In this study, to ensure the validity and reliability of the research tools, the researcher used the following process. First, he used different data-collection tools: that is, the questionnaire with open-ended questions and the semi-structured interview. Second, he examined the relevant literature to ensure the validity of both the questionnaire and the interview. Third, he checked the accuracy of the interview data with the interviewees. Finally, the questionnaire and interview results were cross-referenced to check the validity of the gathered data.

Findings

Through this research project, student teachers' attitudes towards a small-scale educational research project carried out in a research methods course were investigated by way of an open-ended questionnaire and a semi-structured interview. In the light of the data collected from this study, it seems that the majority of student teachers found the small-scale research project valuable, and felt that they gained experience in educational research by participating in it. The findings of this study can be summarised as follows.

During the teacher education process, the assignments that student teachers are required to prepare should be functional, and students should learn skills that they can utilise in their teaching. In this study, the student teachers were first asked what were the most, and

least, valuable aspects of the small-scale research project. From the data, it transpired that the great majority of students found the project valuable, and felt that they gained important skills and understanding from it. Table 1 indicates that 67 student teachers thought that the most valuable aspect of the small-scale research project was learning how to conduct educational research. Besides this, 58 student teachers said that they learned how to write up a research project. On the other hand, according to 61 student teachers, the least valuable aspect of this study was that it was too time consuming.

Perceptions	Frequency	%
I have learned how to conduct educational research	67	90.5
The project is time consuming	61	82
I have learned how to write up a research project	58	78
I have gained research skills	52	70
I have learned how to prepare research questions	50	67.5
I have learned how to research literature	47	63.5
I have learned how to prepare a questionnaire	45	60.8
I have learned how to analyse a questionnaire	40	50

Table 1: What were the most valuable and least valuable aspects of the small-scale research project?

The interview results were in line with the questionnaire results. The great majority of student teachers thought that the most valuable aspect of carrying out small-scale educational research in teacher education was that they learned how to conduct educational research. For example, student teacher 3 said that: *We gained a lot of important knowledge by doing small-scale educational research. We learned how to conduct educational research. Besides this, we learned how to research literature and prepare a questionnaire. Furthermore, we analysed and prepared the questionnaire and prepared a research report*. Student teacher 9 made a similar statement: *We learned how to conduct educational research. Besides this, through this study we gained scientific thinking skills and now can easily prepare a questionnaire. Furthermore, we learned how to write up a research project*. On the other hand, the great majority of student teachers who participated in the interviews thought that the least valuable aspect of conducting a small-scale educational research project was that it was time consuming. The interview results and the questionnaire findings regarding this question are in line with each other. Based on the above results, it would seem that student teachers in social studies learned how to conduct educational research in their research methods course.

The second question that student teachers were asked was how they might use the knowledge and skills that they had gained when they became teachers. Table 2 shows that the great majority of student teachers (63) thought that they might identify problems with their teaching, using the skills and knowledge that they had gained, when they became teachers. Furthermore, they thought that the knowledge and skills that they had learned would provide them with the resources to carry out small-scale educational research projects.

Perceptions	Frequency	%
I could identify teaching problems	63	85
I could carry out small-scale research projects	57	77
I could prepare a project report about a small-scale research project	54	72
I could read research papers quickly	48	64.8
I could prepare a questionnaire	41	55.4

Table 2: How might you use the knowledge and skills gained when you become a teacher?

The interview findings relating to the above questions reveal that the majority of student teachers thought that they might use the knowledge and skills that they had acquired when they become teachers. For example, student teacher 12 stated that: *We will be able to detect teaching problems when we become teachers, by using the knowledge and skills that we have gained through this assignment*. Similarly, student teacher 16 said that: *We will be able to read and understand research papers easily, because we have learned how to conduct educational research*. Furthermore, student teacher 14 said that: *We will be able to prepare questionnaires to identify problems regarding students and teaching*. In the light of both the questionnaire and interview results, it is evident that the great majority of student teachers felt that, when they became teachers, they would carry out educational research projects in order to identify problems with their teaching.

Student teachers were asked whether or not they thought that this kind of assignment should be prepared by student teachers, and, if they answered 'yes' to this question, they were asked to explain their reasons. Table 3 indicates that the great majority of student teachers (65) thought that teaching candidates should prepare educational research assignments, because they needed to be taught how to conduct educational research. In addition, 57 student teachers believed that small-scale educational research is important for student teachers, because they should be taught scientific thinking.

Perceptions	Frequency	%
Student teachers should be taught how to conduct educational research	65	87
Student teachers should be taught scientific thinking	57	77
Student teachers should be taught how to recognise educational problems	54	72
Student teachers should be taught how to examine scientific papers effectively	51	68.9
Student teachers should be taught how to prepare data-collection instruments	48	64.8

Table 3: Do you think that this kind of assignment should be prepared by student teachers? If you answer 'yes' to this question, could you please explain your reasons for doing so?

When the results of interviews relating to above questions are examined, it emerges that student teachers' responses are in line with the questionnaire findings. All the student teachers who participated in the interview stated that student teachers should be taught how to conduct small-scale educational research. Student teacher 7 said that: *In education faculties, student teachers should be taught how to conduct educational research, because when they become teachers, they will then be able to detect and solve teaching and education problems*. Student teacher 15 made a similar statement, saying that: *Student teachers should be taught how to conduct educational research, so as to be able to understand teaching and their students*. The above findings show that the great majority of student teachers who carried out a small-scale educational research project learned educational research skills and developed their ability to think scientifically.

The student teachers were also asked to state how their views on the use of educational research in teaching had been affected by carrying out the educational research assignment. Table 4 shows that, after carrying out the educational research project, the great majority of student teachers (58) thought that educational research is essential to enable them to recognise teaching problems easily. Furthermore, a number of them (53) also came to recognise that educational research is important in creating a better teaching environment.

Perceptions	Frequency	%
Educational research is essential in order to recognise teaching problems easily	58	78.3
Educational research is important for creating a better teaching environment	53	71.6
Educational research is important for helping to understand the source of problems in teaching	47	63.5

Table 4: How has carrying out this assignment influenced your views on the use of educational research in teaching?

The interview findings concerning the above question are in line with the results of the questionnaire. For example, student teacher 11 said that: *After carrying out this study I learned that educational research is essential for recognising teaching problems easily. Through this research project we learned how to recognise teaching problems in schools*. Student teacher 5 stated that: *After this assignment, we understood that educational research is important for creating a better teaching environment*. Based on the above results, it seems that, by conducting a small-scale educational research project, student teachers gain important skills to enable them to recognise problems in education, and to create a better teaching environment.

For the final question, student teachers were asked what kind of educational research they might like to do when they became social studies teachers. Table 5 shows that the great majority of student teachers (66) would use research to detect educational problems when they became social studies teachers. Besides this, 54 social studies student teachers stated that they would do research into social studies textbooks. Furthermore, 50 student teachers would do research into the question of how to decrease the examination anxiety of students.

Perceptions	Frequency	%
I would do research to detect educational problems	66	89.1
I would research social studies textbooks	54	72.9
I would do research to decrease the examination anxiety of students	50	67.5
I would do research to understand students' psychology	48	64.8
I would do research to discover effective learning strategies	44	59.4

Table 5: After having done your research project, what kind of educational research might you like to do when you become a social studies teacher?

When the results of the interviews relating to the above questions are examined, it appears that student teachers' responses are in line with the questionnaire findings. Student teacher 7 said that: W*hen I become a social studies teacher, I would do research to solve education problems, and I would research the question of why some students do not like social studies*. Student teacher 14 stated that: *I would do research on how to decrease students' anxiety about examinations*. Student teacher 18 expressed his ideas as follows: *When I become a social studies student teacher, I would do research into social studies textbooks*. The above findings show that the great majority of student teachers who participated in the study thought that they would do research into educational problems and various other issues regarding teaching and learning.

Conclusion and recommendations

In this paper were presented the results of a qualitative research investigation into student teachers' attitudes towards small-scale educational research projects. This investigation was carried out in a research methods course attended by social studies student teachers in the Fatih Faculty of Education at Karadeniz Technical University, Turkey. In the light of student teachers' attitudes, it can be said that student teachers learned how to conduct a small-scale educational research project by participating in this assignment. Based on the questionnaire and the findings of the semi-structured interview, the major outcomes of this study can be summarised as follows. First, student teachers learned what the requirements of a small-scale educational research project are, and how to carry out such a research project. Second, student teachers claimed that they would use the educational research skills that they gained from this small-scale educational research project when they become social studies teachers. In particular, they felt that they would use their skills to detect problems that occurred in their teaching, prepare relevant data-collection instruments and read research papers analytically. Third, student teachers thought that this kind of small-scale research project should be conducted as part of the teacher education process, because student teachers need to be taught how to carry out educational research in order to recognise and solve teaching problems, and how to examine the results of educational research – findings which are in line with the results of other researchers who have studied this issue (Mortimore, 2000; Everton, Galton and Pell, 2000). Fourth, when student teachers become social studies student teachers, they are likely to exercise their research skills to address issues connected with teaching, some of which are: educational problems, the evaluation of social studies textbooks, the desire to decrease the examination anxiety of students and the pursuit of effective learning strategies.

In this study, some of the results were in line with recommendations made in the literature on Action Research. First of all, the fact that student teachers evaluated the relevant literature to do with their small-scale research project and selected appropriate data-collection tools was in line with the results of Hatch, Greer & Bailey's (2006) research. Besides this, the students both learned and implemented some basic Action Research skills, a development supported by Davies (1995) and Counsell, Evans, McIntyre & Raffan (2000). Furthermore, student teachers diagnosed and then learned to negotiate some specific problems, which was supported by Winter (1996, cited in Zuber & Skerritt (1996) and Cohen and Manion (1997). In sum, in this study, student teachers were involved in various forms of Action Research during their initial teacher training, which is something recommended by Kincheloe (1991).

Although this research project was small, and carried out in only one teacher education programme, some valuable recommendations can be made. First, educational research methods courses should be included in all teacher education programmes. Second, in such educational research methods courses, student teachers should be given the opportunity to implement what they have learned about educational research and write up a research project.

The contributions made by this study can be listed as follows. First, this study contributes to the literature on the benefits of student teachers learning educational research. Second, the present study suggests ways I which student teachers might become involved in a small-scale educational research project in a research methods course. Finally, this study can guide those teacher educators who want to educate student teachers in how to become researchers.

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Appendix 1: The Questions used in the Questionnaire and Interview

1- What were the most valuable and least valuable aspects of the study?
2- How might you use the knowledge and skills gained when you become a teacher?
3- Do you think that this kind of assignment should be prepared by student teachers? If you answer 'yes' to this question, could you please explain your reasons?
4- How has carrying out the assignment influenced your views on the use of educational research in teaching practice?
5- After having done your research project, what kind of educational research might you like to do when you become a social studies teacher?

Appendix 2: Criteria used for the evaluation of educational research reports

- **Title Page**
  Is the title clear?
  Is the title accurately reflecting report?

- **Abstract (maximum 250 words)**
  Are the main aims of the research explained?
  Are the methods used explained?
  Are the data-collection instruments explained?
  Is data analysis mentioned?
  Are the main results and recommendations mentioned?

- **Aims and Purpose of Study**
  Is the purpose of the research clearly explained?
  Is the research problem clearly explained?
  Are the aims/objectives/hypotheses of the research clearly explained?

- **Review of the Literature**
  Are the main books, papers, conference proceedings and Internet resources regarding research evaluated?
  Are the context and background of the study explained?

- **Methodology**
  Is the methodology used in the research explained?
  Are the methods and techniques employed in the research explained?
  Are the data-collection tools used in the research explained?
  Is a sample of the research explained?
  Is the way in which the data has been analysed explained?

- **Statement of Results**
  What are the main findings of the research?
  Are the main findings clearly presented through tables, figures or text?
  Are the tables and figures numbered and given titles?

- **Analysis and Discussion**
  Are the main findings of the research analysed and discussed?

- **Summary and Conclusion**

Are the main findings summarised?
Are the main conclusions presented?
Are recommendations offered in the light of the data gathered?
Are the recommendations consistent with the data gathered?

- **List of References**
  Are there enough references? (I.e., books, papers, conference proceedings and Internet-based resources – at least 10 should be cited)
  Are the references cited correctly? (APA style)