



Pre-service teachers' thoughts about teachers' questions in effective teaching process

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ABSTRACT. This study mainly purposes to investigate pre-service teachers' thoughts about teachers' questions in effective teaching context. In order to investigate this, a descriptive study through survey was used as research approach. 113 pre-service teachers were the participants of the study and they were given a questionnaire including both closed-ended and open-ended questions. Data based on closed questions were analyzed statistically whereas data based on open-ended question was analyzed through content analyses. Mainly, the results of the study indicated that evaluation of learning is very important facility of questioning according to pre-service teachers. In addition, subject knowledge was the most stated factor which affects questioning and motivating students was the most common pointed reason of the pre-service teachers to use questioning.

Key Words: pre-service teachers, teachers, teaching, questions, teacher education.

INTRODUCTION

In the instructional process, one of the more crucial determinants of effectiveness can be the choice of teaching techniques used by teachers. These techniques will tend to vary according to the several factors including the characteristics of the subject content, class size, physical conditions in the class (Küçükahmet, 2000). One such technique regularly used by teachers in the classrooms is questioning. Questioning has been, for thousands of years, one of the most popular modes of teaching (Tan, 2007) and research attention has been paid to teacher questions (Guan Eng Ho, 2005). According to Ornstein and Lasley (2000, p.184, cited in Bonne & Pritchard, 2007) good questioning is both a methodology and an art. Therefore, if used well it can make a significant contribution to improve teaching and learning. By this study, it is thought that to determine pre-service teachers' thought on teacher' questioning in effective teaching process can make a contribution to the research, educators and teachers education programs.

Teachers' questions give the children the opportunity to connect what they know with what they needed to examine and reflect on in their own thinking (Fisher, 1995, p. 76). Some studies (e.g. Durham, 1997) indicate that teachers also view questioning as a basic way to stimulate student thought and to guide the development of knowledge. However, according to McNamara (1994, p.125) questions are also used to encourage children to express themselves orally. On the other hand, Capel, Leask and Turner (1996) state that teacher should consider questioning motivating the students. Petty (1993) notes that questioning can also be used to evaluate the learning of students. According to Vogler (2004, 2005) asking questions can have a positive impact on student learning and most teachers are aware that verbal questioning can facilitate student learning. Researchers studying both traditional face-to-face classroom discourses pointed out that teachers' questions can facilitate dialogic inquiry as stated by Groenke and Paulus (2007).

Danielson (1996; cited in Latham, 1997) notes that questioning is used not only for students' assessment, but also engages students in higher-order thinking process and stimulate their curiosity. As Chin (2006) indicates that flexibility in questioning is needed, the teacher adjusts questioning to accommodate students' contributions and responds to students' thinking in a neutral rather than evaluative manner. Yang (2006, p.196) stated, "... the teachers' questions can be considered as the most powerful device to lead, extend and control communication in the classroom". When used well in teaching, questions function to activate

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thinking. Brown and Edmonson (cited in Cohen, Manion & Morrison, 1996, p.229) list some of the purposes in asking questions as follows: to arouse interest and curiosity concerning a topic, to focus attention on a particular issue or concept, to develop an active approach to learning, to stimulate pupils to ask question themselves and others, to diagnose specific difficulties inhibiting pupil learning, to express a genuine interest in the ideas and feelings of the pupils, to provide an opportunity for pupils to assimilate and reflect upon information. All this suggests that there is a variety of purposes and reasons for asking questions in the classrooms by teachers. Teachers ask many questions in classrooms every day (Gall, 1984; Baumfield & Mroz, 2002). According to the research conducted by Galton, Simon and Croll (1980) the proportion of teachers' time devoted to questioning pupils (12%), making statements (44.7%), 'silent' interaction (22.3%) and no interaction (21%). This indicates that questioning takes an important part of teaching which suggests that teachers' questions are very important in teaching context.

Questioning is an effective and important part of lesson (Muijs & Reynolds, 2005, p.43) and there are several factors which might be considered as important for effective questioning. For example, one of them is good question. A good question is an invitation to think (Fisher, 1987), therefore a good questioning technique should encourage all the students in the class to think as Petty (1993) stated. A good question is a powerful teaching tool and a good teacher knows how to use questions for maximum impact (McHill & Dunkin, 2002) because it is thought that one must be able to question well in order to teach effectively (Brualdi, 1998).

When the questions and the questioning technique are not used effectively, there may be negative results in the teaching-learning process. Wragg (1984, cited in Capel et al., 1996, p. 85), for example, studied the incorrect use of questioning among student teachers. In the study of Wragg, the errors of presentation, e.g. not looking at pupils when asking a question, talking too fast or at an inappropriate volume or not being clear, were identified by teachers as the most common mistakes. Questioning can also give rise to management problems in large groups if some points are not considered by teachers in the classrooms. For instance, if the answers require more time for thought than teachers allow or if the teacher directs the questions to only a few students, students no longer participate fully in the lesson and management problems are often easily observed in the classrooms (Waterhouse, 1990). Taking the multiple purposes of questioning account, it is clear that effective use of questioning can potentially be beneficial to students.

There is a wide range of research on questioning in the teaching process. Hamilton and Brady (1991), for instance, investigated individual and class wide patterns of teachers' questioning in social studies and science classes. The classroom observations and the results showed that there were no differences in teacher questioning between content areas for either mainstream or regular education students at the micro level (teacher to individual student) whereas teachers asked more academic questions than non-academic questions at the macro level. In a different study, Ralph (1999) investigated the extent of the development of teachers' oral questioning skills and observed interns' teaching performance. Interns were also asked to complete a survey. The findings showed that there should be certain adjustments for the interns' practicum program in order to enhance their questioning skills. Sounders, Gall, Nielson and Smith (2001) did an experimental study in order to evaluate alternative methods for training pre-service teachers in questioning skills. In their study some treatment groups received videotape and handbook instruction and regular microteaching practice with junior high school students. Two other groups received the same instruction and regular microteaching or classroom observation experience. One group received instruction based on a traditional exposition method. Comparisons revealed that regular and peer micro teaching produced the most consistent gains in use of questioning skills. Sahin, Bullock and Stables (2002) have also examined the relationship between teachers' beliefs and their practices at Key Stage 2 (ages 7-11) as regards to the use of questioning by using interview and observation techniques. Questions used by preservice teachers were also investigated by Moyer and Milewicz (2002). They pointed out that preservice teachers use questions for checking, probing and for instruction. Mills and Rice (1980) also investigated the correspondence between teacher

questions and student answers in classroom discourse. Briefly, research summarized so far shows that questioning has been studied by researchers at different levels from primary to tertiary.

All mentioned above indicates that effective questioning is a skill that every teacher should develop as also stated by Capel et al. (1996). Teachers can sharpen their questioning skills by becoming familiar with different types of questions in order to help students think more critically and creatively as Chin (2004) states. In addition, teachers must understand the elements of verbal questioning and have a willingness to practice them (Vogler, 2004).

As Imogene and Carol (1990) indicated that educators recognize that teachers need to have expertise in the skill of asking questions. However, effective questioning skills require technical knowledge. Ideally this technical knowledge and the questioning skill should be acquired at the teacher education programs. Therefore, it is important that the student teachers should be provided with the necessary experience, time and context to use effectively the techniques including questioning technique before they are involved in the teaching practice. However, Cotton (1988) stated that research shows that pre-service teachers are given inadequate training in developing questioning strategies and, indeed, that some receive no training at all. In a sense, teacher education programs have responsibilities to acquire such skills to pre-service teachers. As also pointed out in the research done by Uzuntiryaki and Boz (2007) teacher education programs have very important roles in developing scientific skills in pre-service teachers so that they become aware of the importance of these skills and try to improve their students' skills when they start teaching. This is also valid for questioning skills since pre-service teachers should have acquired this.

The main aim of this study was to investigate the views of a group of pre-service teachers about teachers' questions in effective teaching context. Related literature has indicated that although one of the common tasks of the teachers in the classroom is to enhance pupils' understanding through effective questioning, little is known on what pre-service teachers think about questioning skills. For this aim the following questions were examined in the study: (1) what are pre-service teachers' thoughts about the aids of questioning techniques? (2) what are pre-service teachers' thoughts about the factors which can affect teachers' effective questioning? (3) what are pre-service teachers' thought about the reasons for using questioning in the teaching process?

METHOD

Research Design

Since the aim is to determine pre-service teachers' thoughts about questioning in teaching process, a descriptive study is used as the main research approach. It was decided in this study that the survey would be used to gather data from pre-service teachers to identify their thoughts. Coolican (1994) noted that a survey may be used for two major research purposes: descriptive and analytical. Using survey brings several advantages such as the fact that many respondents can be questioned quickly since the questions are structured. The questionnaire in this present study included both open-ended and closed-ended questions which provide both qualitative and quantitative way of collecting data.

Participants

The pre-service teachers in this study were in their last year of teacher undergraduate education program of Gazi University, Education Faculty. A total of 113 pre-service teachers participated in the study. The sample size is too small for making generalizations; however, making generalizations was not the aim of this present study. The study only aims to give a perspective of a group of pre-service teachers on questioning since little is known about what pre-service teachers, in particular, think about this aspect.

Research Instruments

The data were collected through a questionnaire. There were two parts in the questionnaire: closed questions and open-ended questions. The closed items include of ten items

regarding questioning strategies. A Likert type scale was used in the questionnaire to examine the first research question of present study. Pre-service teachers were asked to mark one of the five scaled answers, on a scale of 1 to 5 (1=strongly disagree, 5= strongly agree). It is considered in the study that the courses pre-service teachers took during their training might have an effect on their views. Since they took several courses related to teaching skills and carried out teaching practice in classrooms they might be regarded experienced on questioning strategies.

The questionnaire also included two open ended questions in order to gather data from pre-service teachers regarding with second and third research questions of the study. The main aim of which was to obtain data in a more realistic way (Coolican, 1994). Pre-service teachers were asked two open-ended questions: (1) what types of factors do you think affect teachers' effective questioning? (2) what do you think about the fact that the reasons of using questioning in the classrooms?

The strategies given in the questionnaire were prepared based on the related literature by the researcher. In addition, three instructors' opinions were also taken into account. Rearranging the questionnaire in the light of their recommendations made this instrument more valid and reliable. After finalizing the questionnaire, a pilot study was undertaken with 62 pre-service teachers from the three different education fields. Next, the survey questionnaire was administered to a total of 113 pre-service teachers. All the data were collected in the 2005-2006 academic years. The questionnaire's reliability was found to be .81 (Cronbach's alpha).

Data Analyses

Data were analyzed using SPSS 11.0. Frequencies and percentages were given in tables. In addition, both the mean and standard deviations for the responses to each item were calculated. In analyzing the open-ended questions, content analysis was used. In order to fulfill this aim of analyzing the open-ended questions, written comments were qualitatively analyzed (Miles & Huberman, 1994). The first step was to read carefully teachers' responses (Creswell, 1994). The responses were typed, in order for each question to be seen more easily for saving time and the same process was implemented for each open-ended question. The responses of pre-service teachers were categorized according to the main themes identified. A process was useful for data reduction (Miles & Huberman, 1994; Strauss & Corbin, 1990). In the first categorization, almost all the responses were presented to include less common points as well as more common points pre-service teachers had reported. In the second categorization, the most favored responses were taken into consideration and they were ordered in terms of the number of responses. Finally, in the third categorization, the data were tabulated and presented using frequencies and percentages with respect to the most popular responses. All these steps enabled conclusions to be drawn from the responses for each question. This process provided in-depth information about pre-service teachers' views about teachers' questioning strategies.

RESULTS

As Sellappah, Hussey, Blackmore and McMurray (1998) pointed out in their study that by using questioning and other appropriate teaching strategies, teachers can facilitate the development of critical thinking, decision making and problem solving in students. This part of the study deals with the thoughts of the pre-service teachers on the aspects of questioning that facilitate the teaching. In order to determine these thoughts, some statements are presented to the pre-service teachers. Table 1 shows the distribution of the pre-service teachers' thoughts regarding benefits of questioning.

Table 1. Percentage rates related to the thoughts of pre-service teachers about the facilities of questioning (N=113)

Statements	SA (5) %	A (4) %	PA (3) %	D (2) %	SD (1) %	Mean	SD
1. To control whether pupils understand or not	54.0	38.9	-	5.3	1.8	4.38	.88
2. As indicators of teaching effectiveness	25.7	58.4	4.4	9.7	1.8	3.96	.93
3. To participate all the pupils	23.9	43.4	12.4	17.7	2.7	3.68	1.10
4. To define what pupils know	27.4	49.6	7.1	14.2	1.8	3.87	1.03
5. To manage the classroom.	5.3	22.1	27.4	34.5	10.6	2.77	1.08
6. To raise pupils' attention and interest	23.0	59.3	4.4	11.5	1.8	3.90	.94
7. To evaluate teaching activities	21.2	54.0	15.9	8.8	-	3.88	.85
8. To make teaching active	43.4	46.0	4.4	5.3	.9	4.26	.84
9. To improve pupils' high level thinking skills	30.1	41.6	10.6	15.0	2.7	3.81	1.11
10. To motivate pupils	27.4	50.4	9.7	11.5	.9	3.92	.96
Overall Mean						3.84	.54

1= strongly disagree (SD), 2= disagree (D), 3= partly agree (PA), 4= agree (A), 5= strongly agree (SA)

Overall, as the mean scores presented in Table 1 reveal, item one (teachers can use questions to control whether pupils understand or not) seems to have the most strongly agreed one (Mean = 4.38) by pre-service teachers whereas item five (teachers can use questions to manage the classroom) appear to be the least disagreed item (Mean = 2.77). Table 1 also shows that the pre-service teachers generally agree (Overall Mean=3.84) with all of the ten statements concerning the related benefits of questioning except item five (teachers can use questions to manage the classroom). This suggests they do not intend to use questions for this purpose even though several researchers (i.e. Yang, 2006) might suggest that the questions can be used to control communication in the classroom. In other words, they have no certain decision about using questioning to manage class. This finding reveals that pre-service teachers generally think to use questioning for instructional purposes. In addition the findings indicate that pre-service teacher' thought consistent with literature in general. For the second question of this research, pre-service teachers were asked 'What types of factors can affect teachers' effective questioning?'. The responses of the pre-service teachers were presented in Table 2.

As Table 2 shows that the most common factor which affects teachers' effective questioning according to pre-service teachers was subject knowledge (48.67%). This suggests that pre-service teachers are mainly concerned about having adequate subject knowledge for effective questioning. This was an interesting finding of this present study since related literature on questioning does not mention this point in general. This thought might be related to their position because of they are not very experienced about using questioning technique in teaching. In a sense it should remembered that some skills including questioning can develop by practice in real teaching context and pre-service teachers can have an opportunity more when they begin their teaching career. Other frequently reported factors by pre-service teachers were the "considering pupils' developmental characteristics, 26.54 %" and "effective questioning skills, 19.46%".

Table 2. *Pre-service teachers' thoughts about the factors which can affect teachers' effective questioning (N=113)*

Factors which can affect teachers' questioning	N	%*
Subject knowledge	55	48.67
Consideration of pupils' developmental characteristics	30	26.54
Effective questioning skills	22	19.46
Class size	15	13.27
Pupils' knowledge level	15	13.27
The characteristics of the questions	12	10.61
Students' attention towards the subject	11	9.73
The need for motivating students	7	6.19
Being prepared for the lesson	6	5.30
The characteristics of subject	4	3.53
Pupils' attention towards the subject	3	2.65
The need for evaluating students' knowledge and achievements	3	2.65

* Percent of the total 113 respondents who reported that the factors

Apart from the responses shown in table 2, several pre-service teachers reported some other factors such as time constraints, discipline in the classroom, students' behaviors, students' attitudes towards the subject, the need for making students active. Another open-ended question asked to pre-service teachers was 'Why do you think teachers often use questioning in teaching processes. The most common answers of the pre-service teachers to this question are listed in Table 3.

Table 3. *Pre-service teachers' views about the reasons for using questioning in teaching process (N=113)*

Reasons for using questioning in teaching process	n	%*
To motivate students and to get students' attention	73	64.59
To make students active	37	32.74
To use it for evaluating the students and lesson	34	30.07
For feedback	16	14.15
To reinforce pupils' learning	12	10.61
To manage the classroom	11	9.73
To encourage students to think	7	6.19
To identify students' existing knowledge about the subject	6	5.30

* Percent of the total 113 respondents who reported that the factors.

As seen from Table 3, pre-service teachers generally think that questioning can be used because of different instructional aims. More than half of the participants (64.59 %) indicated that questioning may assist teachers to motivate students and get their attention. As mentioned earlier, some researchers (i.e. Capel et al., 1996) also states that teacher should consider questioning motivating the students. The second point indicated by pre-service teachers (32.74 %) was "to make students active" in the class. Thirdly, many pre-service teachers (30.07%) reported that questioning can be used in order to evaluate students and the course. Apart from the responses given in the above table, several pre-service teachers stated some other points for explaining the reasons for using questioning in teaching process such as having students establish connection between the previous and current information, emphasizing the important concepts related to the subject, reminding students their previous knowledge, establishing an active learning atmosphere, arousing an interest towards the subject, making an interesting start to the lecture, improving creative thinking ability of students and giving feedback.

CONCLUSION AND RECOMMENDATIONS

Several conclusions can be derived from the main results of the study as follows:

- Pre-service teachers in the study think that questions can provide some benefits but many of them (54%) think that evaluation of learning is very important facility of questioning.
- Pre-service teachers' think that effective questioning depends on some factors. Subject knowledge was the most stated factor (48.67 %) which might affect questioning by them.
- Pre-service teachers generally think that questioning can be used because of different instructional aims. Providing teacher to motivate students (64.59%) was the most common pointed reason of the pre-service teachers to use questioning.

Based on the main conclusions of the study, several recommendations can be made.

First, the study stressed one more time that questioning is an important teaching skill. The literature review for this study has indicated that the following topics seem to be studied less in practice: What kinds of questions do the teachers ask in different subject areas? How they ask them and which techniques they use when asking the questions? It seems that future research is needed on these issues.

Second, it might also be possible to suggest that pupils' questions can also be investigated in classroom conditions which might be interesting and useful in order to get important clues for teaching process since it is another aspect of questioning.

Third, it might be useful to investigate teachers' questioning strategies in accordance with some variables such as teachers' experience, seating arrangements etc. Marx, Fuhrer and Hartig (2000), for example, studied on the effects of classroom seating arrangements on children's question-asking and found that children asked more questions in the semicircle classroom seating than in the row-and-column arrangement. However, this might also be investigated in detail.

Fourth, one recommendation is for the development of the pedagogical skills, which should be acquired by pre-service teachers in teacher education programs. It is also necessary that pre-service teachers should be trained with the pedagogical skills in teacher education programs. One of the most important parts of teaching practices for pre-service teachers is to have an opportunity to observe experienced teachers in the real classroom situation. Pre-service teachers can have an idea on learning to teach, which also includes questioning, by observing experienced teachers. Pre-service teachers should also be trained about teaching techniques such as questioning in both theoretical and practical ways. In other words, pre-service teachers should not be embellished with theoretical knowledge only. Ideally, their skills to make use of that knowledge in real teaching contexts should also be developed. This suggests that pre-service teachers should know both what they will teach and how they will teach it because these two aspects complement each other. Therefore, they should be aware that being effective at in one of them is not enough to teach efficiently. Questioning is such kind of pedagogical skill that pre-service teachers can use this skill by not only knowing theoretical aspect about it and observing experienced teachers, but also by using them in their own teaching. It might be possible to say that learning effective teaching skills including questioning would encourage pre-service teachers to attempt similar variations in questioning during their own practice.

All this should be taken into account by those who train future teachers and implemented into teacher training programs. Pre-service teachers should be urged to use the questioning skills from the beginning. As Loughran, Brown and Doecke (2001) noted that learning about teaching in teacher preparation, and learning about teaching through experience as a beginning teacher should be linked which also indicates the importance of the responsibilities of teacher education programs. In sum, when used well in teaching situations, questions function as a way to activate thinking. Every day teachers ask many questions with a range of purposes or sometimes with a limited sense of purpose. However, in teaching contexts questions should be selected carefully and questioning should be used effectively.

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Etkili öğretim sürecinde öğretmen soruları konusunda öğretmen adaylarının düşünceleri

ÖZ. Bu çalışma etkili öğretim sürecinde öğretmen soruları konusunda öğretmen adaylarının görüşlerini araştırmayı amaçlamıştır. Bu amacı gerçekleştirmek için araştırma deseni olarak, ankete dayalı bir betimsel çalışma kullanılmıştır. Çalışma 113 öğretmen adayı ile yapılmıştır, adaylara kapalı ve açık uçlu sorulardan oluşan bir anket verilmiştir. Kapalı uçlu sorulara ilişkin veriler betimsel istatistik kullanılarak, açık uçlu sorulara ilişkin veriler ise içerik analizi yoluyla analiz edilmiştir. Çalışmanın sonuçlarına göre öğretmen adayları, öğrenmenin değerlendirilmesinde soruların oldukça önemli olduğunu düşünmektedirler. Ayrıca, öğretmen adayları soru sormada en etkili unsurun konu bilgisi; soruları kullanmanın en yaygın nedeni olarak da öğrencileri derse motive etmek olduğunu belirtmişlerdir.

Anahtar Kelimeler: öğretmen adayları, öğretmenler, öğretim, sorular, öğretmen eğitimi.

ÖZET

Amaç ve önem: Sınıfta öğretim sürecinde öğretmenlerin kullandıkları tekniklerden biri de soru-cevaptır. Bu yöntem geçmişten günümüze öğretimde en yaygın kullanılan tekniklerden biridir ve öğretim sürecinde pek çok amaçla kullanılabilir. Sorular öğretim sürecinin önemli bir parçasını oluşturduğundan, sınıfta etkili soru sorma stratejilerinin kullanımının öğretmen adayları için de kazanılması gerekli önemli bir beceri olduğu açıktır. Etkili soru sorma birden çok faktörle ilişkilendirilebilir. Bu konuda çalışan araştırmacılar konuyu farklı boyutları ile incelemişlerdir. İlgili literatür taraması bu konuda öğretmenlerle yapılan pek çok araştırma olduğuna işaret etmektedir. Bu çalışma etkili öğretim çerçevesinde öğretmen adaylarının, öğretmenlerin soru sorma teknikleri konusunda düşüncelerini araştırmayı amaçlamıştır. Bu anlamda mevcut çalışma ile öğretmen adaylarının konuya yönelik görüşlerini araştırması açısından, bu konu alanındaki araştırmalara farklı bir katkı sağlanabilir.

Yöntem: Betimsel nitelikteki bu çalışmaya son sınıfa devam eden 113 öğretmen adayı katılmıştır. Araştırmada veriler açık ve kapalı soruları içeren bir anketle toplanmıştır. Anketin geçerlik ve güvenilirlik çalışmaları için, öncelikle ilgili literatürden yararlanılarak araştırmacı tarafından hazırlanan sorular üç uzman görüşüne sunulmuştur. Buna ek olarak üç farklı bölümden toplam 62 öğrenci ile bir ön uygulama yapılmıştır. İlgili düzeltmelerden sonra, anket son haline getirilmiştir. Ankette yer alan maddelerin güvenilirliği hesaplanmış, .81 olarak bulunmuştur. Ankette kapalı uçlu sorular için beşli Likert ölçeğinden (1=Hiç katılmıyorum, 5=Tamamen katılıyorum) yararlanılmıştır. Anket 2005-2006 öğretim yılında öğretmen adaylarına uygulanmıştır. Elde edilen veriler betimsel istatistik ve içerik analizi teknikleri kullanılarak analiz edilmiştir. Kapalı uçlu sorular için yüzde, frekans ve aritmetik ortalamaya dayalı tablolar oluşturulmuş, açık uçlu soruların analizinde ise içerik analizi yapılarak adayların verilen sorulara yönelik en çok vurguladıkları hususlar belirlenerek, tablolaştırılmıştır. Araştırmada temel amaç öğretmen adaylarının öğretmen soruları ve etkili soru sorma konusunda görüşleri hakkında genel bir görünüm elde etmek olduğundan, bu çalışmada genelleme yapmak amaçlanmamıştır.

Sonuçlar: Araştırmada elde edilen sonuçlara göre, öğretmen adaylarının öğretimde kullanılan soruların en önemli faydası olarak ‘öğrenmeyi değerlendirme’ işlevini; soru sormada en önemli faktörlerden biri olarak ise ‘alan bilgisi’ ni belirttikleri görülmüştür. Öğretmen adayları aynı zamanda, öğretimde kullanılan soruların öğrencileri motive etmeyi kolaylaştırdığını düşünmektedirler. Çalışmanın bulguları öğretmen adaylarının öğretmen soruları konusunda teorik bilgiye sahip olduklarını göstermektedir. Ayrıca, adayların görüşlerinin literatürde tartışılan ve vurgulanan bazı hususlarla tutarlı olmakla birlikte, bazı durumlar için adayların farklı boyutlara işaret ettiği gözlenmiştir. Örneğin, öğretmen adayları, soruların sınıfı kontrol etmeye yönelik kullanılabileceğini “en az” düzeyde belirtmişlerdir. Başka bir ifade ile, bu sonuç adayların, soruların ‘sınıfı yönetimi’ konusunda çok işlevsel olmadığını düşündüklerini göstermektedir.

Tartışma ve öneriler: Çalışmada, genel olarak adayların, soru sorma tekniklerinin daha çok öğrencileri derse motive etmek, dikkatlerini derse çekmek, öğrenmelerini değerlendirmek gibi öğretimsel amaçlarla kullanıldığında etkili olduğunu vurguladıkları gözlenmiştir. Araştırmanın diğer bir önemli sonucu, adayların etkili soru sorma konusunda en önemli etken olarak ‘konu bilgisi’ üzerinde durmaları olmuştur. Sorular öğretim sürecinde sıklıkla kullanıldığından, bu konuda daha fazla araştırma ile konunun detaylı olarak incelenmesi mümkün olabilir. Öğretmen ve öğretmen adaylarının bu konudaki uygulamalarına yönelik yeni araştırmalar yapılabilir. Konu, öğretmen ve öğrenci etkileşimi vs. gibi farklı boyutları açısından ve yine farklı disiplin alanlarındaki uygulamaları ile incelenebilir.