Relationship Between Classroom Management Beliefs and Ethical Sensitivity Levels of Prospective Elementary Mathematics Teachers *

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Abstract
This correlational survey study aims to determine classroom management beliefs and ethical sensitivity levels of prospective elementary mathematics teachers, to examine them in terms of various variables and to find out the relationship between these two concepts. Data were collected through the Attitudes and Beliefs on Classroom Control Scale and Ethical Sensitivity Scale from a convenience sample of 169 prospective elementary mathematics teachers. According to the results, both female and male prospective teachers are closer to the interactionalist approach in terms of classroom management. However, female prospective teachers tended to be more interactionist in the people management dimension. There were also significant differences in terms of grade level. Additionally, the participants reported a high ethical sensitivity, except for "preventing social bias" dimension. Finally, some relations were observed between the dimensions of two scales at the end of the study. These relations can guide educators in training effective and ethical teachers.

Key words: Ethical sensitivity, classroom management beliefs, prospective elementary mathematics teachers

Introduction

Classroom management is a crucial issue for an effective teaching process. Proper management of a classroom requires much effort, and most of the responsibility lies with the teacher (Marzano, Marzano & Pickering, 2003). In the literature, classroom management appears to be a challenging issue not only for novice teachers but also for experienced teachers (Laut, 1999; Rosas & West, 2009; Sokal, Smith, & Mowat, 2003).

Although teachers state that classroom management is an essential factor for successful teaching, they have difficulty in explaining what it means (Bosch, 2006). According to Ming-tok and Wai-shing (2008), classroom management is providing a learning-friendly environment in which students learn with pleasure, and the teacher

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can share this pleasure with them. Learning process and behaviors of students occur in the classroom environment formed by teachers. Every teacher desires students who want to learn, to be in school and to be happy about what they are doing. Proper classroom management is the realization of this desire (Hall, Quinn & Gollnick, 2017). In addition, classroom management requires that teachers are aware of their beliefs on how a student learns and they can make their plans under these beliefs (Williams, 2009). In other words, the classroom management beliefs of teachers play an essential role (Martin & Baldwin, 1994; Martin, Yin & Baldwin, 1998) since the teacher's beliefs affect the expectations of the teacher about the students' learning and behavior (Erdena & Wolfgang, 2004; Martin & Sass, 2010; Sass, Lopes, Oliveira & Martin, 2016). Besides, teachers' beliefs and ethical values such as honesty, fairness, respect, and kindness (Campbell, 2003) are interrelated with their professional characters (Hanhimäki & Tirri, 2009). Their ethical characters and values affect their interaction with students, their pedagogical practice and decision-making process in and outside the classroom (Hanhimäki & Tirri, 2009; Tirri, 2010). Their instructional choices, way of students' behavior management, approaches to discipline and classroom management styles have an ethical dimension (Campbell, 2003; Fenstermacher, 1990; Osguthorpe, 2008; Sabbagh, 2009). However, teachers are not always aware of the ethical dimension of their practices (Campbell, 2003). However, if they do recognize this dimension, it allows for associative linking between their field and pedagogical knowledge (Osguthorpe, 2008). Therefore, ethical values may be effective in teachers' classroom management styles. To be able to manage their classrooms effectively, it is crucial that teachers and prospective teachers have ethical sensitivity. For this reason, the question arises of whether there exists a relationship between prospective teachers' beliefs about classroom management and their ethical sensitivity, which means recognizing the elements of a situation and interpreting them appropriately (Narvaez, Endicott, Bock, & Mitchell, 2001). From this point, this study aims to determine the relationship between prospective elementary mathematics teachers' classroom management beliefs and their ethical sensitivity levels. In the literature, there are several studies that have dealt with the classroom management beliefs of teachers and prospective teachers in terms of gender (Gencer & Cakiroglu, 2007; Gürçay, 2015; Martin & Yin, 1997; Martin, Yin & Mayall, 2006, Savran, 2002; Savran & Çakıroğlu, 2004). Other studies investigated whether teaching experience was a statistically significant variable for classroom management beliefs of teachers (Martin, Yin & Mayall, 2006, Martin & Baldwin, 1994; Martin & Baldwin, 1992; Laut, 1999). Others examined whether classroom management beliefs differed significantly in relation to physical conditions such as class size or the school's location (Martin, Yin & Baldwin, 1998; 1997). Furthermore; the effect of classroom management training (Martin, Yin & Mayall, 2006; Martin & Yin, 1998) and self-efficacy beliefs of teachers and prospective teachers (Gencer & Cakiroglu, 2007; Gürçay, 2015; Martin, Yin & Mayall, 2008; Rosas & West, 2009)

on their classroom management beliefs was questioned. Self-efficacy is one of the individual differences that shape thought patterns, behaviors and actions (Marzuki, Subramaniam, Cooper & Dellaportas, 2017). Moreover; it was found that teacher self-efficacy is effective on student learning, performance (Ross 1992; Tschannen-Moran & Hoy 2001), and positive teacher behaviors (Skaalvik & Skaalvik 2007; Wolters & Daugherty 2007). The other determinant of actions is ethical sensitivity (Rest, 1982). Teachers who have ethical sensitivity *"...can regulate the emotional, sociological, and pedagogical aspects of their practice"*(Gholami &Tirri, 2012, p.2), such as their self-efficacy beliefs.

Several studies in the literature have focused on the ethical sensitivity of teachers (Gholami & Tirri, 2012; Kuusisto, Tirri & Rissanen, 2012; Ottekin-Demirbolat, & Aslan, 2014;) and of college students (Hebert, Meslen & Dunn, 1992; Ozdogan & Eser, 2007). Others have investigated whether their ethical sensitivity differed significantly in terms of their gender (Gholami & Tirri, 2012; Ottekin-Demirbolat, & Aslan, 2014; Ozdogan & Eser, 2007), age (Ozdogan & Eser, 2007), school levels (Gholami & Tirri, 2012; Ottekin-Demirbolat, & Aslan, 2014) as well as teaching experiences and branches (Kuusisto, Tirri & Rissanen, 2012; Ottekin-Demirbolat, & Aslan, 2014). However, to date there has been no study that determines the relationship between teachers' ethical sensitivity levels and their classroom management beliefs. The possible relationship between these two concepts can guide the education of ethical and teachers who manage their classrooms effectively, because ethical sensitivity is teachable (Hanhimäki & Tirri, 2009), and training in classroom management affects the beliefs of teachers (Martin, Yin & Mayall, 2006). It has also been suggested that beliefs will eventually be recognized as one of the most valuable psychological constructs in teacher education (Pintrich, 1990). The results of this study can guide educators, researchers and teachers all over the world to reveal professional properties of teaching. In this context, the following research questions have been formulated:
For prospective elementary mathematics teachers,
1. What are their classroom management beliefs and do they differ in terms of gender and grade level?
2. What is their ethical sensitivity level, and does it differ in terms of gender and grade level?
3. Is there a relationship between their class management beliefs and their ethical sensitivity levels?

Theoretical Framework and Literature Review
Glickman and Tamashiro (1980), Wolfgang and Wolfgang (1995) present a model that conceptualizes teachers' beliefs about children's development. This model proposes three approaches depending on the amount of control the teacher uses in the

interaction process between the teacher and the student: the interventionist approach, the non-intrusive approach, and the interactionalist approach. The mentioned model of the Teacher-Student Control Continuum is presented in Figure 1 below.

Teacher Control

Student Control

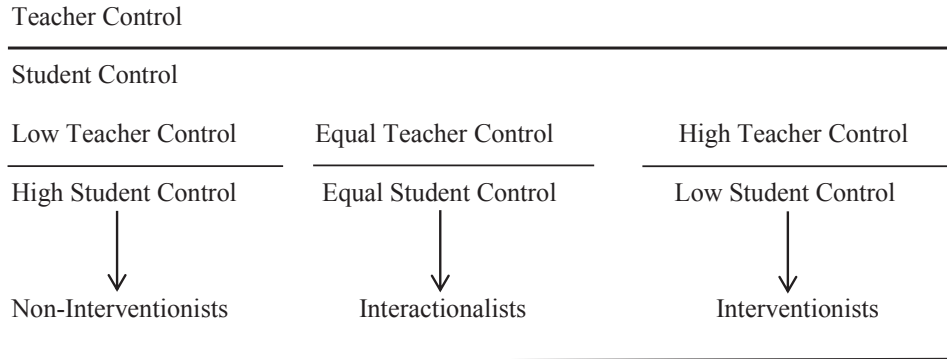| Low Teacher Control	Equal Teacher Control	High Teacher Control
High Student Control	Equal Student Control	Low Student Control
↓	↓	↓
Non-Interventionists	Interactionalists	Interventionists

Figure 1. Teacher-student control continuum
(Glickman and Tamashiro, 1980, p.460)

As seen in Figure 1, teachers who believe that teacher control should be low and student control should be high are called *non-interventionists*. Teachers who interiorize this approach believe that students have the inner power to correct their undesired behaviors, and use non-guiding techniques in their interaction with the students (Glickman & Tamashiro, 1980). The interventionist teachers, on the other hand, believe that teachers should have more control with a higher level. These teachers think that students can learn the desired behaviors only through reinforcement. They believe that undesired behaviors are the result of insufficient reward or punishment, because they believe that student behavior is shaped by external conditions, (Glickman & Tamashiro, 1980). *Interactionalist* teachers come in the middle. Interactionalist teachers believe that students should have equal control power with them. They are in favor of the application of the conventional rules as well as solutions that satisfy both students and themselves (Glickman & Tamashiro, 1980).

For effective classroom management, besides choosing a philosophical approach, the teacher should create a respectful and supportive learning environment (Burden, 2016). Effective teaching and a positive learning environment take place only in good order. Providing such an environment is one of the main objectives of classroom management. Another aim of it is to improve the development of students' personal, emotional and social proactively and developmentally (Ming-tok & Wai-shing, 2008).

Teachers make various decisions about their students. These decisions affect the students' intellectual, emotional and social development (Buzzelli & Johnston, 2002; Zubay & Soltis, 2005). Therefore, it can be said that, these decisions and positive

teacher actions are essential both for effective classroom management and for students' development. For this reason, teachers should behave ethically to protect and improve their students' physical and psychological well-being (Erdem & Şimşek, 2013; Hanhimäki & Tirri 2009).

Rest (1982) argues that the ethical decision-making process consists of four units: ethical sensitivity (moral sensitivity), moral evaluation, moral motivation, and moral character. Ethical sensitivity, which is also called interpreting the situation, may be defined as being aware of the effects of a person's actions on other people, both directly and indirectly (Rest, 1982). Narvaez, Endicott, Bock, and Mitchell (2001) define ethical sensitivity as an empathic interpretation of an event and its components such as individuals, action options and possible responses to these options. According to Svara (2007), sensitivity requires being aware of the ethical aspect of a matter, searching for its different solutions and evaluating these solutions. Ethically sensitive people can understand the cause-effect chain of events (Brabeck, Rogers, Sirin, Henderson, Benvenuto, Weaver & Ting, 2000). Narvaez et al. (2001) also state that ethical sensitivity consists of seven skills. These skills include reading and expressing emotions, taking the perspectives of others, caring by connecting to others, working with interpersonal and group differences, preventing social bias, generating interpretations and options, and identifying the consequences of actions and options.

There are also several ethical values such as honesty, justice, respect and compassion in many activities of teachers during the classroom management process (Osguthorpe, 2008). Teachers should consider how their behavior has an impact on other people, as well as whether there is negligence or inadequacy in what they do (Campbell, 2003). Teachers should be sensitive to clues about the situation and be able to consider various options when responding (Hanhimäki & Tirri, 2009). Teachers who can evaluate both the teacher-student and other interactions in terms of the welfare of the students have ethical sensitivity (Fedeles, 2004). If a person does not have ethical sensitivity, he or she will not feel the need to find and implement an ideal moral solution (Bergem, 1986). Furthermore, given that, in accordance with Item 2 of the Basic Law of National Education No. 1739, education aims to develop the students as a whole (MoNE, 1973), it can be said that this item places the responsibility of being ethically sensitive and effective classroom managers on the teachers. The dimensions of ethical sensitivity (Gholami & Tirri, 2012; Hanhimäki & Tirri, 2009; Fedeles, 2004; Narvaez et al. 2001) and classroom management beliefs (Martin, Yin, & Mayall, 2008; Martin & Baldwin, 1992) have been investigated, but there appears to be a gap in the literature on whether these two constructs of the teaching profession are related to each other.

Methodology
Research model

This study is carried out by a correlational survey model from the quantitative research method. Correlational research is defined as *"research that investigates the relationship between two or more variables without interfering with these variables in any way."* (Büyüköztürk, Çakmak, Akgün, Karadeniz & Demirel, 2016, p.185). Classroom management beliefs and ethical sensitivity levels of prospective mathematics teachers, which are the dependent variables in the current study, will be examined in terms of gender and grade level as independent variables. In addition, the relationship between their ethical sensitivity levels and classroom management beliefs will be discussed.

Data collection tools

Two data collection tools are used during this research apart from the demographic information of prospective mathematics teachers to make comparisons related to research questions. The first data collection tool is Attitudes and Beliefs on Classroom Control Scale and used to determine prospective mathematics teachers' beliefs on classroom management. The second one is Ethical Sensitivity Scale which is used to examine their ethical sensitivity.

Attitudes and beliefs on classroom control scale

The origin form of Attitudes and Beliefs on Classroom Control Scale (ABCC) is ICMS (The Inventory of Classroom Management Style) developed by Martin and Baldwin (1992). ICMS was redefined and renamed by the same researchers in 1997 as Attitudes and Beliefs on Classroom Control Scale, and it was adapted into Turkish by Savran and Çakıroğlu (2004). The original scale consists of 26 items and three dimensions named as instructional management, people management and behavior management. However, in the process of adaptation to Turkish (Savran & Çakıroğlu, 2004), 22 items and two dimensions, namely instructional management and people management, were confirmed. Furthermore, the scale was revised once more in 2007 by Martin, Yin and Mayall, and they confirmed the two-dimensional structure of the scale. The final scale is a four-point Likert type, and the first 12 items are related to the instructional management dimension while the last 10 items belong to the people management dimension. Validity and reliability studies were conducted for the current study. Cronbach Alpha value was calculated as .81, which is highly reliable (Akgül & Çevik, 2003). For the validity, confirmatory factor analysis was conducted, and its results are summarized in Figure 2.

As seen in the Figure 2, there are two factors for 22 items, similar to the adaptation study done by Savran and Çakıroğlu (2004). The first 12 items belong to the instructional management dimension, and the last 10 items to the people management

dimension. The values calculated for confirmatory factor analysis are acceptable as x^2 = 311.17, df = 207, p = .00, RMSEA = .05, CFI = .93, NFI = .82, NNFI = .92, GFI = .86 and IFI = 0.93 (Anderson & Gerbing, 1984; Cole, 1987; Marsh, Balla & McDonald, 1988).
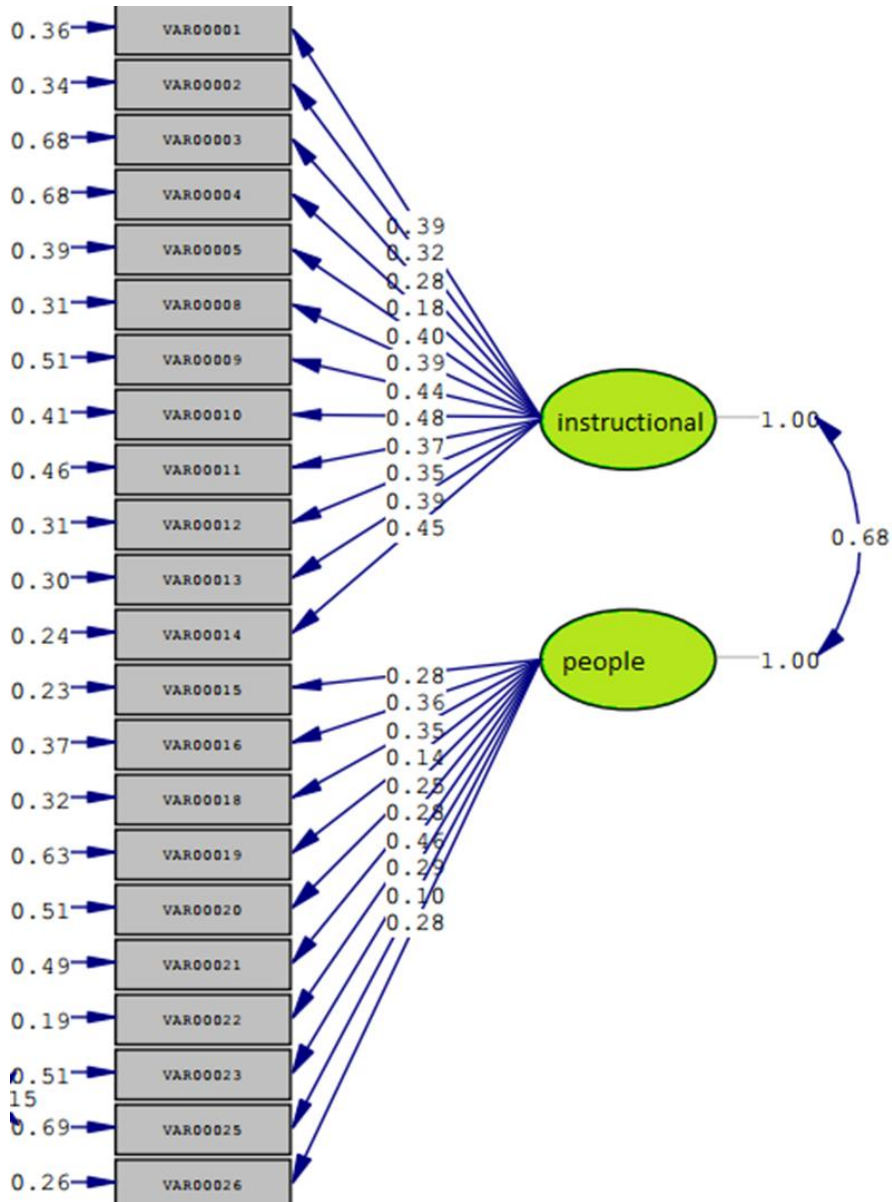

Figure 2. Confirmatory factor analysis results of the attitudes and beliefs on classroom control scale

Ethical sensitivity scale

Ethical Sensitivity Scale, developed by Tirri and Nokelainen (2007) and adapted to Turkish by Ottekin-Demirbolat and Arslan (2014) is used as the second data collection tool. The scale does not include any professional perspective (Narveaz et al., 2001), which means it is not field-specific. The scale is a five-point Likert type and consists of seven dimensions which represent seven skills of ethical sensitivity. The dimensions are named respectively as reading and expressing emotions, taking the perspectives of others, caring by connecting to others, working with interpersonal and group differences, preventing social bias, generating interpretations and options, and identifying the consequences of actions and options.

The validity and reliability studies of the scale were conducted for the current study. Specifically, Cronbach Alpha value was calculated as .85, which is highly reliable (Akgül & Çevik, 2003). Confirmatory factor analysis was run, and the results are summarized in Figure 3.

As seen in Figure 3, there are seven dimensions for 28 items, and each dimension has four items. Items 1-2-3-4 belong to first dimension, which is named *reading and expressing emotions*. Items 5-6-7-8 belong to the second dimension, named *taking the perspectives of others*. Items 9-10-11-12 belong to the third dimension, named *caring by connecting to others*. Items 13-14-15-16 belong to the fourth dimension, named *working with interpersonal and group differences*. Items 17-18-19-20 belong to the fifth dimension, named *preventing social bias*. Items 21-22-23-24 belong to the sixth dimension, named generating interpretations and options. Lastly, items 25-26-27-28 belong to seventh dimension, named *identifying the consequences of actions and options*.

The values calculated for confirmatory factor analysis are acceptable as x^2 = 476.26, df = 326, p = .00, RMSEA = .05, CFI = .95, NFI = .86, NNFI = .94, GFI = .84 and IFI = 0.95 (Anderson & Gerbing, 1984; Cole, 1987; Marsh, Balla & McDonald, 1988).
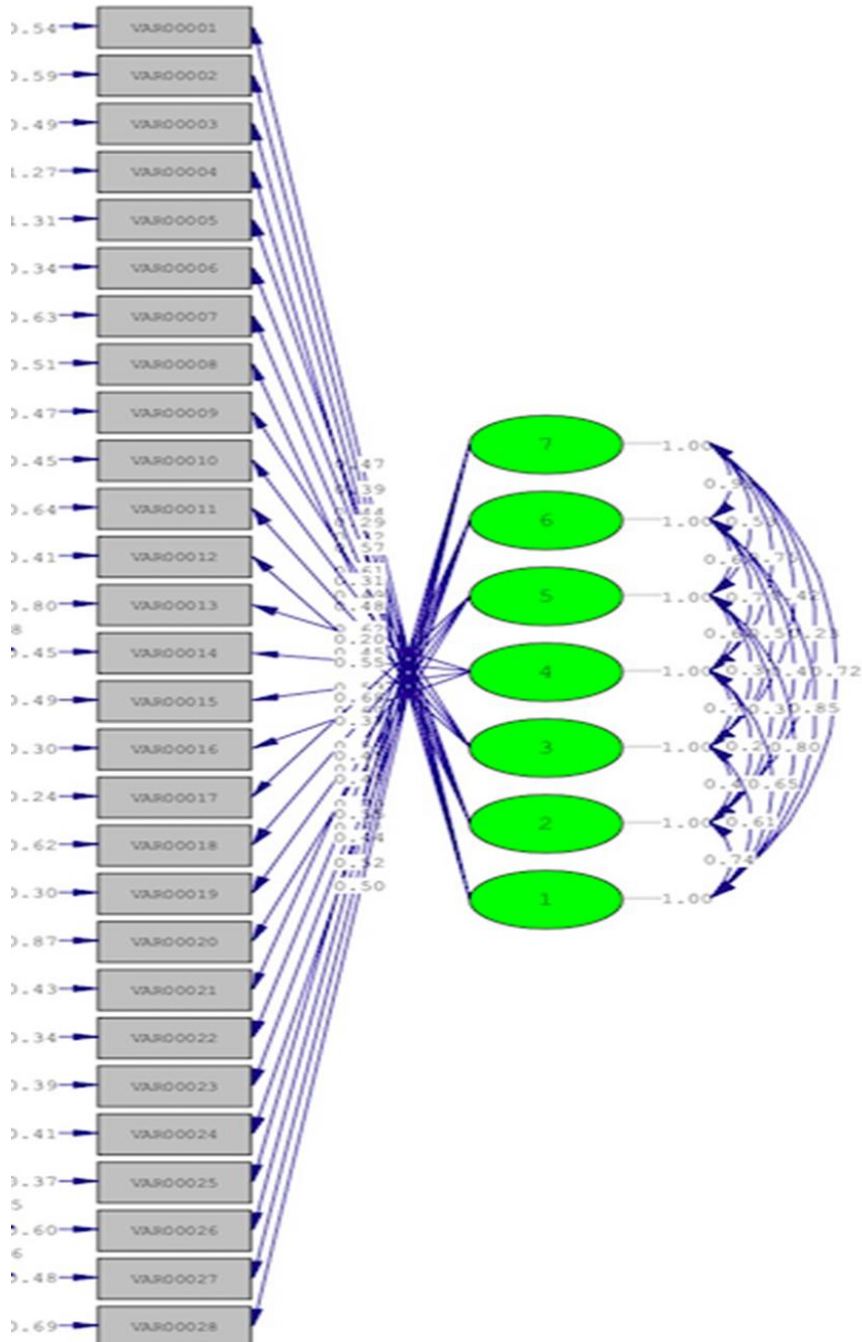
Figure 3. Confirmatory factor analysis results of ethical sensitivity scale

Population and sample

The population of this study is the prospective elementary mathematics teachers who are studying in the elementary mathematics education department of public universities in the central Anatolian region of Turkey. One of the public universities in this region was selected through the convenience sampling method, in which the sample includes a *"group of individuals who (conveniently) are available for study"* (Frankel & Wallen, 2000, p.100). To eliminate the disadvantages of this method, demographic information and other characteristics of the sample was presented carefully (Frankel & Wallen). As a result, the current sample consisted of 169 prospective elementary mathematics teachers. Table 1 presents the demographic information of the sample.

Table 1.
Demographic Information of the Sample

Variables		N	%
Gender	Female	128	75.7
	Male	41	24.3
Grade level	Freshmen	39	23.1
	Sophomores	40	13.7
	Juniors	41	24.3
	Seniors	49	29.0
Total		169	100

The current sample included 169 prospective teachers. Of these, 128 were female, and 41 male. There were 39 freshmen, 40 sophomores, 41 juniors and 49 seniors.

During the descriptive statics, missing values were excluded from the analysis. This explains why the sample size differs according to the dimensions of scales. The descriptive statistics according to the data collection tools are presented in Table 2 below. In both scales, Kolmogorov Simogrov test values are found to be higher than .05 and skewness, and kurtosis values are found to be between +1 and -1. George and Mallery (2003) report that the group has normal distribution when the skewness and kurtosis coefficients are between +2 and -2. Therefore, it is concluded that the data show a normal distribution. Therefore, parametric tests were used through SPSS 20.0.

Table 2.
Descriptive Statistics of the Sample

Scale / Dimension	N	X	Skewness	Kurtosis
Attitudes and beliefs on classroom control scale / instructional management	164	38.04	-.08	-.16
Attitudes and beliefs on classroom control scale / people management	168	30.63	.16	.76
Attitudes and beliefs on classroom control scale	163	68.72	.24	.34
Ethical sensitivity scale / reading and expressing emotions	168	14.45	-.22	.15
Ethical sensitivity scale / taking the perspectives of others	167	14.14	-.01	.11
Ethical sensitivity scale / caring by connecting to others	165	16.06	-.40	.05
Ethical sensitivity scale / working with interpersonal and group differences	166	15.13	-.12	-.29
Ethical sensitivity scale /preventing social bias	168	13.51	.05	.03
Ethical sensitivity scale / generating interpretations and options	162	15.06	-.30	.50
Ethical sensitivity scale / identifying the consequences of actions and options	168	15.12	-.24	-.23
Ethical sensitivity scale	151	103.94	.12	-.08

Data analysis process

SPSS and LISREL programs were used during data analysis. Independent group t-test was used for the analysis of the gender variable because this variable has two groups. ANOVA test is used for the analysis of grade-level variable, because this variable had four groups and post hoc tests were conducted to determine the significant differences among the groups. Furthermore, Pearson moments multiplication correlation analysis is performed to determine the relationship between prospective mathematics teachers' classroom management beliefs and their ethical sensitivity levels (Büyüköztürk, 2013; Seçer, 2015) The correlation values are interpreted according to categorization made by Çokluk, Şekercioğlu and Büyüköztürk (2016), in which a correlation value of .00 indicates no relationship; a value between .01-.29 indicates a low-level relationship; between .30-0.69, a medium-level relationship; between .70-1.0, high-level relationship.

In addition, the lowest score (12 points) that can be obtained from the instructional management dimension of attitudes and beliefs on classroom control scale shows the non-interventionist approach, the highest score (48 points) indicates the interventionist approach, and the mid-point (30 points) represents the interactionalist approach (Savran & Çakıroğlu, 2004). Similarly, the lowest score that can be obtained from people management dimension of attitudes and beliefs on classroom control scale (10

points) indicates the non-interventionists approach; the highest score (40 points) implies the interventionist approach; the mid-point (25.5 points) shows the interactionalist approach (Savran, 2002). Regarding the Ethical Sensitivity Scale, the level of ethical sensitivity is interpreted according to the mean score: specifically, between 1.00-1.80 represents a very low-level sensitivity; between 1.81-2.60, low-level sensitivity; between 2.61-3.40, medium-level sensitivity; between 3.41-4.20, means high-level sensitivity; between 4.21-5, very high-level sensitivity (Ottekin-Demirbolat & Aslan, 2014).

Findings

The findings of the research are presented according to the research questions.

Classroom control attitudes and beliefs of prospective elementary mathematics teachers

Table 3 shows the descriptive statistical results of prospective elementary mathematics teachers' classroom management and beliefs.

Table 3.

Descriptive Statistical Results of Prospective Elementary Mathematics Teachers' Classroom Management Beliefs

Dimensions	N	Min.	Max.	X	Sd
Instructional management	164	24	48	38.04	4.51
People management	168	19	40	30.63	3.16
Whole scale	163	50	86	68.72	6.03

Results show that the beliefs of the prospective elementary mathematics teachers about the instructional management are closer to interactionalists approach (with X = 38.04), and their people management beliefs are closer to interactionalists approach (with X = 30.63). Their classroom management beliefs in general are also closer to the interactionalist approach (with X = 68.72).

Table 4 shows the results of the classroom management beliefs of prospective elementary mathematics teachers in terms of gender.

Table 4.
T-Test Results of Prospective Elementary Mathematics Teachers' Classroom Management Attitudes and Beliefs According to Gender

Factor	Gender	N	X	Sd	df	t	p
Instructional management	Female	123	37.86	5.01	162	-.87	.51
	Male	41	38.58	4.91			
People management	Female	127	30.70	3.35	166	.51	.02
	Male	41	30.41	4.46			
Whole scale	Female	122	68.63	5.86	161	-.33	.98
	Male	42	69.00	6.58			

Results in Table 4 show that the classroom management beliefs of prospective elementary mathematics teachers do not differ significantly according to gender in instructional management dimension (t = -.87; p = .51> .05), or in the whole scale (t = -.33; p = .98> .05). However, there is a significant difference between male and female prospective teachers in people management dimension of the scale, and this difference is in favor of females (t = .51; p = .02< .05). Overall, results indicate that both female and male prospective teachers adopt the interactionalist approach in all dimensions and whole scale.

In addition to gender, classroom management beliefs of prospective elementary mathematics teachers are examined in terms of grade level. The results are presented in Table 5.

Table 5.
ANOVA Results of Prospective Elementary Mathematics Teachers' Classroom Management Beliefs According to Grade Level

Factor	Grade level	N	X	Sd	df	F	p	The difference exists between groups
Instructional management	Freshmen	37	39.83	3.50	3	6.86	.00	Freshmen-Sophomores Sophomores-Juniors Sophomores -Seniors
	Sophomores	40	35.60	5.01				
	Juniors	38	38.05	4.71				
	Seniors	48	38.81	3.75				
People management	Freshmen	37	30.02	4.00	3	2.12	.08	-
	Sophomores	40	30.37	3.15				
	Juniors	38	31.57	2.42				
	Seniors	48	30.60	2.81				
Whole scale	Freshmen	37	69.86	6.00	3	3.90	.01	Freshmen-Sophomores Sophomores-Juniors Sophomores -Seniors
	Sophomores	40	65.97	6.18				
	Juniors	38	69.63	6.10				
	Seniors	48	69.41	5.32				

In Table 5, it is seen that the classroom management beliefs of prospective elementary mathematics teachers differ significantly in instructional management dimension (F = 6.86; p = .00 <.05) and in the whole scale (F = 3.90; p = .01 <.05) although there is no significant difference in people management dimension (F = 2.12; p = .08 >.05) according to grade level. The significant difference in instructional management dimension is seen between the freshmen and sophomores in favor of freshmen, between sophomores and juniors in favor of juniors and between sophomores and seniors in favor of seniors, according to the Post Hoc tests performed to find out which groups have a significant difference. Furthermore, a significant difference in the whole scale is seen again between the freshmen and sophomores in favor of freshmen, between sophomores and juniors in favor of juniors and between sophomores and seniors in favor of seniors.

Moreover; results in Table 5 suggest that in instructional management dimensions alone, freshmen are closer to the interventionist approach. However, the prospective teachers in other groups are closer to interactionalist approach. It is observed that in the people management dimension and whole scale, prospective teachers in all grade levels are more interactionalist.

Ethical sensitivities of prospective elementary mathematics teachers

As seen it is mentioned before, the level of ethical sensitivity was determined according to the mean score of each dimension of the scale. In Table 6, prospective teachers' mean scores in each dimension and the whole scale is given. Since each dimension has four items, if the mean of each factor score divided by four, then the ethical sensitivity level of prospective teachers can be determined for this dimension.

Table 6.
Descriptive Statistical Results of Prospective Elementary Mathematics Teachers' Ethical Sensitivity

Factor	N	Min	Max	X	Mean	Sd
Reading and expressing emotions	168	7	20	14.45	3.61	2.40
Taking the perspectives of others	167	7	20	14.14	3.53	2.64
Caring by connecting to others	165	10	20	16.06	4.01	2.27
Working with interpersonal and group differences	166	9	20	15.13	3.78	2.29
Preventing social bias	168	8	20	13.51	3.37	2.49
Generating interpretations and options	162	6	20	15.06	3.76	2.52
Identifying the consequences of actions and options	168	8	20	15.12	3.78	2.65
Whole scale	151	78	134	103.94	3.71	11.15

The means for each dimension (Table 6) show that prospective teachers had high ethical sensitivity in "reading and expressing emotions" dimension (X = 3.6), "taking the perspectives of others" dimension (X = 3.53), "caring by connecting to others" dimension (X = 4.01), "working with interpersonal and group differences" dimension (X = 3.78), "generating interpretations and options" dimension (X = 3.76) and lastly "identifying the consequences of actions and options" dimension (X = 3.78). However, prospective teachers show medium ethical sensitivity only in "preventing social bias" dimension (X = 3.37). When it comes to the whole scale, it can be said that prospective elementary mathematics teachers have high-level ethical sensitivity (X = 3.71).

Table 7 presents the findings of the ethical sensitivities of prospective elementary mathematics teachers in terms of gender.

Table 7.

T-test Results of Prospective Elementary Mathematics Teachers' Ethical Sensitivity According to Gender

Factor	Gender	N	X	Sd	df	t	p
Reading and expressing	Female	127	14.36	2.31	166	-.91	.36
emotions	Male	41	14.75	2.68			
Taking the perspectives of	Female	126	14.03	2.59	165	-.96	.33
others	Male	41	14.48	2.79			
Caring by connecting to others	Female	124	15.95	2.28	163	-.98	.32
	Male	41	16.36	2.25			
Working with interpersonal and	Female	125	15.20	218	164	.768	.49
group differences	Male	41	14.92	2.61			
Preventing social bias	Female	128	13.26	2.40	166	-2.37	.01
	Male	40	14.32	2.61			
Generating interpretations and	Female	124	14.93	2.29	160	-1.14	.25
options	Male	38	15.47	2.27			
Identifying the consequences of	Female	124	15.09	2.65	166	-.26	.79
actions and options	Male	38	15.21	2.68			
Whole scale	Female	113	103.56	10.95	149	-.72	.47
	Male	38	105.07	11.81			

In Table 7, it is seen that the ethical sensitivity levels of prospective elementary mathematics teachers differ significantly only in "preventing social bias" dimension according to gender (t = -2.37; p = .01< .05), in favor of male prospective teachers. In other words, male prospective teachers have higher level of ethical sensitivity than females.

In addition to gender, ethical sensitivity levels of prospective elementary mathematics teachers were examined in terms of grade level. Results are presented in Table 8, in which it is seen that the ethical sensitivity levels of prospective elementary mathematics teachers differ significantly only in "caring by connecting to others" dimension (F = 3.38; p = .02 <.05) while there is no significant difference in other dimensions. The significant difference in caring by connecting to other dimensions is seen between

the sophomores and seniors in favor of the latter. Moreover, when the means in the whole scale are examined (Table 8), it can be seen that the mean score of seniors have higher means than the other prospective teachers, but this difference is not statistically significant.

Table 8.
ANOVA Results From Prospective Elementary Mathematics Teachers' Ethical Sensitivity According to Grade Level

Factor	Grade level	n	X	Sd	df	F	p	The difference exists between groups
Reading and expressing emotions	Freshmen	35	13.82	2.35				
	Sophomores	33	14.30	2.57				
	Juniors	37	14.64	2.11	3	2.17	.09	-
	Seniors	46	15.15	2.45				
Taking the perspectives of others	Freshmen	35	13.62	2.46				
	Sophomores	33	14.36	2.49				
	Juniors	37	13.64	2.22	3	1.46	.22	-
	Seniors	46	14.69	2.96				
Caring by connecting to others	Freshmen	35	16.17	2.44				
	Sophomores	33	15.33	2.39				Sophomores-Seniors
	Juniors	37	15.78	1.88	3	3.38	.02	
	Seniors	46	16.78	2.08				
Working with interpersonal and group differences	Freshmen	35	15.31	2.44				
	Sophomores	33	14.48	2.22				
	Juniors	37	14.89	2.11	3	1.83	.14	-
	Seniors	46	15.67	2.43				
Preventing social bias	Freshmen	35	13.17	2.30				
	Sophomores	33	13.27	2.40				
	Juniors	37	14.13	2.33	3	1.72	.16	-
	Seniors	46	13.86	2.60				
Generating interpretations and options	Freshmen	35	15.48	2.51				
	Sophomores	33	14.30	2.29				
	Juniors	37	15.13	2.35	3	1.61	.18	-
	Seniors	46	15.60	2.41				
Identifying the consequences of actions and options	Freshmen	35	14.68	2.68				
	Sophomores	33	15.78	2.48				
	Juniors	37	14.51	2.29	3	2.26	.08	-
	Seniors	46	15.78	2.75				
Whole scale	Freshmen	35	102.28	10.61				
	Sophomores	33	101.84	11.13				
	Juniors	37	102.75	9.95	3	2.57	.06	-
	Seniors	46	107.67	11.90				

Relationship between level of ethical sensitivity of prospective elementary mathematics teachers and their classroom management beliefs

The last research question is about the relationship between the level of ethical sensitivity of prospective elementary mathematics teachers and their classroom man-

agement beliefs.

According to Table 9, it can be observed that there is no relationship between "taking the perspectives of others" dimension of ethical sensitivity and "instructional management" dimension of classroom management beliefs (r=0, p>.05); between "taking the perspectives of others" dimension of ethical sensitivity scale and classroom management beliefs scale (r= .14; p>.05). In addition to these findings, no relationship was seen between the "caring by connecting to others" dimension of ethical sensitivity and "people management" dimension of classroom management beliefs (r=.11; p>.05). Moreover, there is no relationship between "people management" dimension of classroom management beliefs and "preventing social bias" (r=.07; p>.05) as well as "generating interpretations and options" dimensions of ethical sensitivity (r=.14; p>.05). Lastly, no relationship was found between "preventing social bias" dimension of ethical sensitivity and classroom management beliefs (r=.15; p>.05).

Table 9.
Relationship Between Ethical Sensitivity Level of Prospective Elementary Mathematics Teachers and Their Beliefs on Classroom Management

Ethical Sensitivity	Classroom Management		
	Instructional management	People management	Whole scale
Whole scale	.28**	.22**	.33**
Reading and expressing emotions	.26**	.15*	.27**
Taking the perspectives of others	.00	.26**	.14
Caring by connecting to others	.19*	.11	.20*
Working with interpersonal and group differences	.27**	.19*	.29**
Preventing social bias	.16*	.07	.15
Generating interpretations and options	.33**	.14	.31**
Identifying the consequences of actions and options	.27**	.27**	.35**

*Correlation is significant at the .05 level (2-tailed)
**Correlation is significant at the .001 level (2-tailed)

On the other hand, a medium-level relationship was seen between the ethical sensitivity scale of prospective elementary mathematics teachers and their classroom management beliefs (r=.33; p<.001). A medium-level relationship was also seen between "classroom management beliefs" and "generating interpretations and options" dimension (r=.31; p<.001) as well as "identifying the consequences of actions and options" dimension of ethical sensitivity (r=.35; p<.001). Again, a medium level relationship was observed between the "generating interpretations and options" dimension of ethical sensitivity and "instructional management" dimension of classroom management beliefs (r=.33; p<.001). Finally, a low-level relationship was observed between the remaining dimensions of two scales.

Discussion

According to findings on classroom management beliefs of prospective elementary mathematics teachers, it is seen that they are closer to the interactionalist approach in both the people management and instructional management dimensions, besides in the whole scale. These findings in instructional management dimension does not comply with the research of Savran (2002) though the findings of both studies are parallel in people management dimension. Savran found that prospective teachers were closer to the interventionist approach in the instructional management dimension, but they were closer to interactionalist approach in people management dimension. Moreover, Savran states that this situation in instructional management dimension may be caused by the fact that prospective teachers perceive being an effective teacher as maintaining the order. In addition, prospective teachers may have thought that an interventionist approach can be beneficial in instructional management because they consider teacher role in this dimension as managing teaching materials and process (Savran, 2002; Savran & Çakıroğlu, 2004). The difference between this study and the literature may derive from the undergraduate program of prospective teachers that researches are conducted on. Specifically, that the current sample consisted of prospective elementary mathematics teachers, while Savran (2002) examined the prospective science teachers.

In this study, both female and male prospective teachers were closer to the interactionalist approach in all dimensions and whole scale. However, a significant difference was observed between male and female prospective teachers in favor of female students in the people management dimension. However, this difference between the average of female and male prospective teachers is very small in numerical terms. The studies that were conducted by Savran and Çakıroğlu (2004) with prospective science teachers and by Martin, Yin and Baldwin (1997), and Martin and Yin (1997) with teachers, indicate that there was no significant difference in the classroom management beliefs according to gender. While they support the findings of this study in the instructional management dimension, they do not comply with the findings in people management dimension. However, in other studies, male prospective teachers (Gencer & Çakıroğlu, 2007; Gürçay, 2005) and male teachers (Martin, Yin & Mayall, 2006, 2008) were found to be more interventionist than females in instructional management dimension. These findings do not parallel those of the current study, which found no significant differences in instructional management dimension according to gender in this study.

Findings regarding the grade levels of prospective teachers showed that the classroom management beliefs of prospective elementary mathematics teachers differ significantly in instructional management dimension and in general, between the freshmen and sophomores in favor of freshmen; between the sophomores and juniors in favor of juniors; and between sophomores and seniors in favor of seniors. Moreover, in the instructional management dimension, freshmen tended toward the intervention-

ist approach, but the other groups were closer to interactionalist approach. The reason for this situation may be related to the courses they have or have not taken during the teacher education process. Being in their first year of teacher education, freshmen have taken few educational sciences courses. It is likely that they responded to the scale items by taking their past teachers as a model. The sophomores, however, having completed several educational science courses, responded differently. However, there was no difference in people management dimension. For the people management dimension and the whole scale, the prospective teachers in all grade levels tended toward being interactionalist. This finding can derive from the fact that none of the prospective mathematics teachers had completed classroom management courses because the related data collection instruments were administered at the beginning of the semester, and this course is given during the fall semester of the final year of teacher education.

When the ethical sensitivity levels of prospective elementary mathematics teachers are analyzed, it is seen that they have high ethical sensitivity in terms of all dimensions of the scale except for "preventing social bias" dimension. However, in the studies of Ottekin-Demirbolat and Aslan (2014), Kuusisto, Tirri and Rissannen, (2012) and Gholami and Tirri (2012), it was concluded that the teachers' ethical sensitivity levels are high in all dimensions. This difference may result from the samples of the studies being different. In other words, gaining experience in the profession can increase the ethical sensitivity level of teachers. In addition, culture may be a factor which can cause this difference, because being a teacher may require adaptation to the culture.

As the difference between male and female prospective teachers of ethical sensitivity levels is examined, in "preventing social bias" dimension, male prospective teachers have significantly more ethical sensitivity than females. This result can be interpreted as a difference in the cultural structure due to the perspective of women. However, there was no significant difference between female teachers and male teachers in this dimension in the research of Ottekin-Demirbolat and Aslan (2014). Again, this result may be due to the difference between the samples since the data collection tool is the same for both studies. Moreover, in contrast to the results of this study, Ozdogan and Eser (2007) found that females have significantly higher ethical sensitivity levels in their study conducted with students in different departments of a university. The reason for this discrepancy could because of the measurement tool that was used in current study is different, and because of this, it may have yielded different results.

Also, according to the grade levels, it is seen that the ethical sensitivity levels of prospective elementary mathematics teachers differ significantly only in terms of "caring by connecting to others" factor between the sophomores and seniors in favor of the latter, whereas there were no other differences. In literature, the studies related to the relation between grade level and ethical sensitivity are limited, but there are some that have investigated the relationship between the age and ethical sensitivity levels. For example, Hebert, Meslin and Dunn (1992) concluded that there was no relationship

between age and ethical sensitivity in a study with medical students. Similarly, Oz-dogan and Eser (2007) could not find a relationship between age and ethical sensitivity in their study that they conducted with students studying in different departments. If the age and grade levels are considered as similar variables, it can be said that the related the findings of this study is similar to the literature.

Finally, a relationship was found between the classroom management beliefs of prospective elementary mathematics teachers and their ethical sensitivity levels. According to the results, there is a medium-level relationship between their ethical sensitivity levels and classroom management beliefs of prospective teachers. A medium-level relationship was also seen between their general beliefs on classroom management and their ethical sensitivity in both "generating interpretations and options" dimension and in "identifying the consequences of actions and options" dimension. In addition, a medium-level relationship was observed between their ethical sensitivity in "generating interpretations and options" dimension and their beliefs in "instructional management" dimension.

Conclusion

According to findings on classroom management beliefs, it is seen that prospective teachers are closer to interactionalists approach in both people management and instructional management dimension, besides the whole scale. In other words, the prospective teachers think that the teacher and the student should have a balanced control in the classroom. This finding suggests that prospective teachers are expected to act in a democratic classroom when they are employed. However, a small but significant difference was observed between male and female prospective teachers in favor of female students in the people management dimension. Besides, prospective elementary mathematics teachers' classroom management beliefs differ significantly in instructional management dimension and in general, but not in people management dimension. This situation may be due to the variety of courses they have taken during their teacher education according to the year levels.

In addition, prospective elementary mathematics teachers had high ethical sensitivity in terms of all dimensions of the scale, except for "preventing social bias" where male prospective teachers had significantly higher sensitivity scores tahn females, which may be the result of culture. Regarding the relation between ethical sensitivity and classroom management beliefs, a medium-level relationship was found between some dimensions of both scales. From this point, it can be said that the teachers' classroom management beliefs and their ethical sensitivity skills could play an important role in the effective and efficient implementation of curricula according to the constructivist approach. With this point, the classroom management beliefs of prospective elementary mathematics teachers who are the teachers of the future and their ethical sensitivity levels become more important. This is why more studies should be conduct-

ed with different samples of teachers and prospective teachers, and the results should be compared with related aspects of the current study. Classroom management courses in the undergraduate teacher education program and the newly added course named Morals and Ethics in Education may have a positive effect on increasing their theoretical knowledge and practice. Furthermore, through techniques such as case studies, creative drama, and micro-teaching, it is expected to improve the skills of prospective teachers in related field areas. Besides these, if the classroom management beliefs and ethical sensitivity levels of the prospective teachers who are registered on each teacher education program and at all year levels could be determined, professional development activities might be organized in these areas according to these findings, and their developmental process could be examined. Finally, investigation of the classroom management beliefs and ethical sensitivity levels of teachers could help in the design of in-service training programs.

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