THE CHARACTERISTICS OF A GOOD MATHEMATICS TEACHER IN TERMS OF STUDENTS, MATHEMATICS TEACHERS, AND SCHOOL ADMINISTRATORS

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ABSTRACT

This qualitative research aims to examine the opinions of school administrators, teachers, and middle school students about what makes a good mathematics teacher. Interviews were conducted with thirty-five participants: ten school administrators, ten mathematics teachers, and fifteen middle school students. A semi-structured interview form consisting of three questions was used. According to the results obtained, students, teachers, and school administrators agreed that a good mathematics teacher should know how to teach mathematics. The students assessed a good mathematics teacher as someone who not only explains mathematics well, but also takes into account the positive teacher-student relationship. They also expressed that they learn better when the mathematics teacher teaches mathematics by relating it to real life and prepares concrete examples like pictures and graphics. Mathematics teachers defined a good mathematics teacher in terms of knowledge of mathematics, knowledge of mathematics teaching methods, and affective features. According to school administrators, on the other hand, a good mathematics teacher should have mathematics teaching ability; develop himself/herself professionally; communicate with students, colleagues and parents effectively; and obey the rules of institution.

Keywords: Good Mathematics Teacher, Mathematics Teacher Education, Identity, Professional Identity.

INTRODUCTION

There has not been a clear agreement about what can be considered characteristics of good mathematics teachers, and there is a major educational debate about how to prepare ideal teachers (Stronge, 2007). What constitutes a good mathematics teachers as viewed by parents, students, teachers, and researchers mostly varies according to educational background. The understanding of what characteristics best exemplify a good teacher also seems to vary according to the philosophical underpinnings of the research and expectations from teacher (Wilson, Cooney, & Stinson, 2005) which gives rise to different definitions. For example, Davis and Hersh (1981) define the ideal teacher as the one "who invites students to 'come, let us reason together' rather than one who uses "proof by coercion" (p. 282). According to Polya (1965), "the mathematics teacher should not merely impart information, but should also try to develop the ability of the students to use the information imparted" (p.100). Additionally, Polya listed the following features for teachers: (i) be interested in the subject; (ii) know your subject; (iii) know about ways of learning; (iv) give students 'know how'; (v) attitudes of mind, habit of methodical work; and (vi) suggest it, do not force it down their throats (p. 116).

The "good teaching" notion that stands out among these definitions has been handled by Palmer (1997) from a different point of view. He stated that: "good teaching cannot be reduced to technique; good teaching comes from identity and integrity of the teacher" (p. 10). In the next section, the concept of identity and the professional identities of mathematics teachers are explained by Da Ponte and Chapman's (2008) point of view in order to

deepen the term of "good mathematics teacher".

1. Mathematics Teachers' Professional Identity

Identity includes our experiences and knowledge, our perceptions of ourselves, others' perceptions of us, and our perceptions of others (Wenger, 1998), which means identities are constructed as we interact with others and regulate our participation according to the reactions of others to us (Da Ponte and Chapman, 2008). Da Ponte and Chapman presented professional identity at two levels; individual and community, and stated that "teachers' professional identity includes their appropriation of the values and norms of the profession; their core beliefs about teaching and about themselves as teachers; a vision of what it means to be an 'excellent teacher' and of the kind of teacher they want to be; a sense of self as a learner and a capacity to reflect on experience" (p. 242). Da Ponte and Chapman (2008) explained these key components as illustrated in Figure 1.

Researchers put the pre-service teachers' knowledge of mathematics and knowledge of mathematics teaching at the centre of the model. Prospective teachers' professional identity includes both knowledge of mathematics and mathematics teaching. According to them, teachers' professional identity deals with factors, such as values, habits, norms, dispositions, and in general, ways of being a teacher. The development of identity is nested in the group identity of the teachers' professional community, for example, the established values and norms of the profession and the processes of professional interactions. The final component of this landscape consists of several elements, including program elements, research, organization of the educational system, and socio-cultural features of the society that can influence the nature of pre-service teacher education programs.

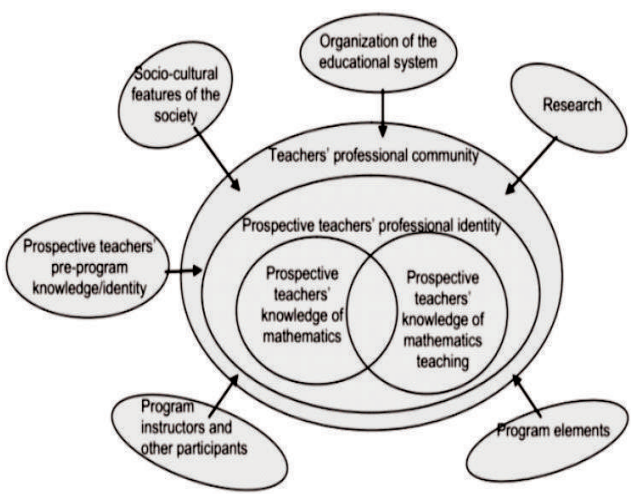

Figure 1. Landscape of Pre-service Mathematics Teacher Education (Da Ponte and Chapman, 2008, p.224)

As seen in Figure 1, multiple criteria can affect the development of teachers and the identification of the ideal mathematics teachers. In addition to knowledge of mathematics and knowledge of mathematics teaching, the professional identity of teachers and the professional community involved influences the training of mathematics teachers. From this point of view, a good mathematics teacher should not be evaluated only for the level of knowledge she/he has because "teachers are engaged in practice not just with their knowledge, but also with all their being" (Da Ponte and Chapman, 2008, p.241).

The qualities of a good mathematics teacher and the teacher's professional identity are shaped by the expectations and ideas of the communities, in which the teacher interacts as reported in literature. Therefore, in this research the opinions of the students, mathematics teachers and school administrators that teachers are most interacting are addressed.

2. Related Studies

Numerous studies have been conducted in the literature both to determine the qualifications of a good mathematics teacher and construction of teacher identity.

In order to determine the qualifications of a good mathematics teacher, Murray (2011) investigated students' views regarding 'good' mathematics teachers. Similarly, Wilson, Cooney, and Stinson (2005) examined nine experienced and professionally active teachers' views of good mathematics teaching and how it develops. Ubuz and Sarı (2009) examined 109 third-year primary teacher candidates' views on being a good teacher. Kaur (2009) investigated students' descriptions of the qualities of 'good mathematics lessons' and the 'best mathematics teachers'. Sanders (2002) examined the attributes of good mathematics teachers used by 80 schools to screen applicants for mathematics teaching posts in the U.K. White, Barnes, Lawson, and Johnson (2009) asked 800

Australian secondary students to identify the aspects of teaching that they thought helped their learning. Similarly, Işıktaş (2015) investigated 262 third year teacher candidates' views on being a good teacher. Tobe (2008) examines the differences in teacher characteristics and teacher effects between 223 teachers who were linked to 12,369 students in grades 5 through 8.

In terms of development of teacher identity; Johnson and Golombek (2002) examined teachers' identity, based on social categories created by society. He had the social identity theory viewpoint in which society denoted the characteristics of 'teachers'. Kelchtermans (1993) who examined teacher identity from an individual perspective suggested that a teacher's identity is constructed by factors of self-image, job motivation, task perception, and future perspective. Akkoç, Balkanlıoğlu, and Yeşildere-İmre, (2016) investigated how pre-service mathematics teachers perceive what constitutes the practice of a professional community of mathematics teachers.

In addition to the studies in literature, the present study aimed to explore students', mathematics teachers', and school administrators' thinking about the characteristics of good mathematics teachers. In particular, the following research questions were addressed in this study:

- What are the qualities of a good mathematics teacher from the point of view of the students?
- What are the qualities of a good mathematics teacher from the point of view of the teachers?
- What are the qualities of a good mathematics teacher from the point of view of the school administrators?

3. Methodology

3.1 Participants and Settings

In the study, a total of thirty-five people were interviewed. Ten of them were school administrators (principal or assistant principal), ten of them were mathematics teachers, and fifteen of them were middle school students. In the selection of the participants, a purposeful sampling strategy was used and volunteering to participate in the research was determined as a criterion. The teachers and managers all worked in different schools and had more than ten years of professional experience. The students interviewed were 12–14 years old.

3.2 Data Collection Tools

A semi-structured interview form as shown in Appendix consisting of three questions was prepared in order to understand the views of participants about the characteristics of a good mathematics teacher.

While preparing the interview form, expert opinion was taken and the necessary arrangements were made. In addition, a pilot study was conducted with three teacher candidates. The interviews took about forty minutes.

4. Data Analysis

Content analysis was carried out in the analysis of the research data. All interviews were audio-taped and transcribed. Data was read several times and participants' responses to the questions were coded and categorised into major themes. Verbatim transcripts of the interviews were read again after a month and the two categories then cross checked for consistency.

5. Results

As parallel to the three research questions presented above, the characteristics of a good mathematics teacher will be explored through the eyes of students, teachers, and school principals.

5.1 Qualities of a Good Mathematics Teacher according to Students

The opinions of students about what constitutes a good mathematics teacher are collected under six headings. These are presented in Table 1.

Nearly all of the students stated that the teachers should teach mathematical content well. Three of these students (S_2, S_3, and S_5) were convinced that teaching mathematical content well means explaining the concepts without looking at the textbook. S_2 explained this idea in the following way: "teaching mathematics without looking at

Categories		f
A good mathematics teacher	should teach mathematics well	11
	should be positive, not aggressive	10
	should not give too much homework	6
	should help students love mathematics	6
	should understand the students	5
	should not teach the content too fast	4

Table 1. Frequencies of Students' Opinions

the textbook indicates that the teacher already knows what the subject is all about". Similarly, S_5 stated that a good teacher should teach without looking at any source. She/he said that, a "mathematics teacher should teach just using his/her mind, not any other resources like textbook or notes. Such a lecture shows that she/he knows the subject very well". Some of the students (S_{10}, S_{11}, S_{12}, S_{13}, and S_{14}) stated that they wanted the teacher to relate the lessons to real life. One of these students, S_{12} said, "We will learn better if the mathematics teacher teaches mathematics by relating it to real life and evaluates us in a way that we can express ourselves (like performance tasks, projects) instead of testing". One of the students, S_{11} stated that the mathematics teacher had to be prepared before the lesson to explain the subject well: "My mathematics teacher teaches the concepts from the internet, and sometimes with a slide show. This complicates the understanding. Instead, if my teacher prepares concrete things like pictures and graphics, we have better understanding". Six of the students (S_{13}, S_{15}, S_{14}, S_{10}, and S_{12}) also thought that a good math teacher teaches by using hands-on materials, creating a classroom discussion environment, and incorporating group work.

The pupils identified the teacher's approach to students as a feature of being a good mathematics teacher. The two most prominent of these features are: not being nervous and understanding the students. S_3 explained his/her opinion this way: "a good mathematics teacher does not act nervously, loves children, and does not yell at them'. Similarly S_5 stated that, "the mathematics teacher should explain the things we do not understand and respond to all questions without getting angry". The students stated that teachers must have an understanding of the conditions in their own lives. Apart from being students who are trying to learn mathematics at the school, they point out that a good mathematics teacher should consider the problems in their lives. S_6 said that, "a teacher who listens to my problems and who cares about me, asking how I am when I'm upset, is a good teacher". S_{10} described his/her opinion about good mathematics teacher as follows: "A good mathematics teacher behaves close to us, does not get angry when we solve the problem wrongly, and acts sensitively to our personal problems". Among the students, there are those who pay more attention to the way teachers behave than to teach mathematics. One of the students, S_1, said, "my teacher cannot teach mathematics well, but s/he treats us very well, so I think s/he is a very good teacher".

Six of the students (S_2, S_5, S_9, S_{11}, S_{13}, and S_{14}) said that they did not like mathematics because of their lack of understanding of the topics. Students expressed that because some teachers behave so hastily in order to not fall behind with the curriculum, they have difficulty understanding the topics. S_{14} said, "My teacher teaches so fast and I have difficulty understanding maths. Teachers should help us to understand and love mathematics". According to the students, a good mathematics teacher should help them appreciate mathematics by providing them meaningful contexts rather than being so focused on accomplishing the curriculum on time.

Teachers' approach to homework was included in defining a good mathematics teacher (S_1, S_3, S_4, S_5, S_{14}, and S_9). Students generally complain of too much homework. S_9 said that a good teacher would not give too much homework because students want to have time to study. Students do not want to be given homework without teaching. S_3 expressed his/her opinion as follows: "A good mathematics teacher should not overthrow the lesson by giving homework. A person who does not have content knowledge and who is constantly giving homework for this reason is not a good mathematics teacher". The reason why students think that good teachers should not give homework is students think that homework is given by teachers who do not teach well. Expressing this idea, S_4 said, "It is not appropriate not to teach at school and give homework".

To summarize, it can be said that students assessed a good mathematics teacher by not only knowledge of the mathematics, but also attitudes and approach to the students. The students also used personality traits, such as nervousness and empathy to define a good mathematics teacher.

5.2 Qualities of a Good Mathematics Teacher according to Mathematics Teachers

The opinions of mathematics teachers about being a

Categories		f
A good mathematics teacher	should love mathematics and teaching mathematics.	6
	should know how to teach.	7
	should have a high level of mathematics knowledge.	7
	should encourage students to love mathematics and teachers.	7
	should not give too much homework.	3

Table 2. Frequencies of Mathematics Teachers' Opinions

good mathematics teacher are collected under five headings. These are presented in Table 2.

Six of the teachers said that a good mathematics teacher should love mathematics and mathematics teaching (T_1, T_2, T_4, T_7, T_8, and T_{10}). T_1, stated that being a teacher does not end in the classroom and that work should be continuous, which is only possible when one loves one's profession and continued, "When the lesson is over, it would not be appropriate to take a notebook and go home. A good mathematics teacher should study and be prepared for the course. They should be able to grasp mathematics". Thinking that being a teacher goes beyond working hours, T_{10} explained this idea: "A good math teacher should feel professional dedication, be professionally bound and love the child". T_2, who thought it was very important for the teacher to love his profession, refers to the need for a mathematics teacher to take into account where s/he is teaching: "For example, I work in a school with a low educational and socio-economic level. I know where my students come from. I teach mathematics knowing that I am a teacher of these conditions". T_8, who emphasized professional development, said that "a good mathematics teacher should develop himself/herself in the field of mathematics and have a researcher's soul". T_4 pointed out that, "a good mathematics teacher should be energetic and said she/he should not be dull, should be alive and moving instead".

Another issue that teachers are concerned with is that a good math teacher should know how to teach mathematics. Seven of the teachers expressed this idea (T_1, T_2, T_3, T_4, T_6, T_7, and T_8). T_3, one of those who expressed this view, said that "a good mathematics teacher should be able to use the teaching methods and materials appropriate to the capacities of the students, should recognize their students and take into account their mental and psychological development". T_2 made the following statement: "Knowledge alone is not enough. A good math teacher is not the person who solves each question, but the one who conveys his/her knowledge in the best way. No learning method is absolutely right. The teacher should ask himself/herself how best to teach this topic". T_6 and T_4 attached importance to the use of materials in mathematics teaching. T_4 said, "A good mathematics teacher should frequently use concrete materials to teach the content. Students have to work by touching, thinking and dealing with themselves. Instead of memorizing generalizations, group work should be done". T_3 and T_7 emphasized the relationship of mathematics to everyday life. T_3 said that, "a good mathematics teacher should be able to draw attention of the students by establishing mathematics in relation to daily life". T_7 explained that, "the goal of a good mathematics teacher is not to make students pass the national exams, but to understand how mathematics is used in life".

Another quality of a good mathematics teacher that teachers noted was having a high-level of mathematical knowledge. Seven of the teachers agreed with this idea (T_1, T_3, T_4, T_5, T_7, T_8, and T_9). T_1 explains that, "you cannot make students comprehend the concepts unless your mathematical knowledge is enough". T_9 said that, "a good mathematics teacher should be able to answer all questions of students".

Seven of the teachers stressed the affective domain of learning (T_2, T_4, T_6, T_7, T_8, T_9, and T_{10}) and said a good mathematics teachers should encourage students to love mathematics and mathematics teachers. T_4 explained in the following way: "The students tend to be afraid of mathematics, so teachers should not try to establish authority, but instead try to make students love teachers and math". T_7, who agreed with T_4, explained that, "the teacher should help students love the mathematics by being in good relationship with the student and behaving beautifully". T_6, who thinks that she should be an example to her students with her behaviour, says: "teacher should be loving, friendly, and role model with positive attitude towards students".

According to the teachers, the last of the characteristics of a good mathematics teacher concerns giving homework. Three of the interviewed teachers addressed this issue (T_3, T_4, and T_6). Teachers emphasized that students should not be given too much homework. T_3 said, "Less homework should be given to summarize the subject in such a way that the student is not squeezed", and T_4 stated that the homework given should correlate with the level of the student. T_6 criticized homework using the following words: "The students are given too much homework; the subjects are given homework without proper processing, which makes it difficult for the students to understand".

To summarize, teachers define a good mathematics teacher in the context of knowledge of the mathematical content, knowledge of mathematics teaching, and affective characteristics. They think that it is necessary for the teacher to enjoy his profession to be a good mathematics teacher.

5.3 Qualities of a Good Mathematics Teacher according to School Administrators

The opinions of school administrators about being a good mathematics teacher are collected under seven headings. These are presented in Table 3.

The school administrators have a lot to say about the teaching of mathematics in a meaningful way. The majority of administrators pointed to the use of materials for meaningful mathematical learning (SA_2, SA_4, SA_5, SA_6, SA_7, and SA_9). SA_4 emphasized that mathematics should be taught conceptually: "Mathematics should be taught by establishing relationships with daily life and using appropriate materials. Students should know why they are learning mathematical concepts". Similarly, SA_5 focused on the connection of mathematics with daily life and stated that a good mathematics teacher should have sufficient knowledge of mathematics: "A good math teacher should use concrete materials and work to increase motivation. For this, mathematical knowledge should be good enough". SA_4 emphasized that teachers should not have a teaching approach based on giving homework: "Some of the mathematics teachers solve merely two or three examples and give 20–30 questions as homework. This type of lesson is to distract students from mathematics".

Categories		f
A good mathematics teacher	should teach mathematics well.	8
	should update himself/herself professionally.	8
	should help students to love mathematics.	6
	should adapt to the conditions in which he/she is.	6
	should be successful in national exams.	6
	should have good communication skills.	5
	must comply with the rules set by the ministry of education.	4

Table 3. Frequencies of School Administrators' Opinions

Another issue that school administrators place emphasis on is that teachers should develop themselves professionally (SA_3, SA_4, SA_5, SA_6, SA_7, SA_8, SA_9, and SA_{10}). SA_3 said that "teachers must follow innovations. For example, they should have knowledge of the new curriculum and materials and should be aware of the changes made". SA_5, who focused on the curriculum change like SA_3, said, "Most teachers follow the old curriculum rather than the new curriculum. However, teachers should be followers of the updates". SA_7 approached this issue more generally and stated that the teacher should update himself/herself in all areas, not just in terms of curriculum, with the following words: "Teachers should use new teaching methods and techniques, adapt to changing educational policies, be open to innovation and conduct research".

Six of the school administrators stated that teachers should help students to love mathematics (SA_2, SA_3, SA_6, SA_8, SA_9, and SA_{10}). The common view of teachers is that students who do not like mathematics are unsuccessful because they do not want to deal with mathematics.

Some of school administrators (SA_1, SA_5, SA_6, SA_7, SA_9, and SA_{10}) stated that teachers must comply with the conditions they are in and be self-sacrificing. SA_1 explained his/her thinking as follows: "When I was working in a cold city I taught the relationship between the meter and the decameter in the snow with the help of a meter stick". Similarly SA_5 said: "a good mathematics teacher should be self-sacrificing and love students despite all kinds of difficulties and physical impossibilities".

Five of the school administrators stated that they care about ensuring that students succeed in the national examinations (SA_5, SA_6, SA_8, SA_9, and SA_{10}). SA_7 said, "If the success of a mathematics teacher's students' national test

is low, the problem is with the teacher himself/herself". SA_5 explained the reason for teachers' failure in this way: "Due to the pressure of accomplishment, the concepts are learned by memorizing instead of conceptual learning, and there is a dilemma between old and new teaching methods". Only one of the school administrators (SA_3) who commented on national examinations stated that national exams should be conclusions, not goals, and that the "individual success of the student should be considered, not the national exam results".

Other qualities that school principals regard as qualifications of a good mathematics teacher relate to their ability to communicate and to comply with the formal behaviours set by the Ministry of National Education. Five of the school principals paid attention to the communication skills of a good mathematics teacher, especially with the parents (SA_1, SA_6, SA_8, SA_9, and SA_{10}). SA_1 said, "There will be no education among the four walls. Communication is made up of the student-parent-teacher trio, and the teacher should be in dialogue with students' parents". Four school administrators (SA_2, SA_6, SA_8, and SA_{10}) reported that a good mathematics teacher should pay attention to the rules, such as timely entry into the course and giving importance to ethical values set by the National Ministry of Education.

In summary, it has been determined that school administrators assess a good mathematics teacher not only for mathematics teaching ability, but also for professional development, communication skills, and compliance with rules.

Conclusion

Students assessed a good mathematics teacher as someone who not only explains mathematics well, but also takes into account the positive teacher-student relationship. Davis (2003) described the positive student-teacher relationships as having emotional closeness, warmth, caring, support, acceptance, respect, fairness, and low levels of conflict and dependency. They considered all these as the major of features of a good teacher. Students also stated that teachers should not teach the content too quickly. These results are in line with what has been reported by Murray (2011), White, et al. (2009) and Strikwerda-Brown, Oliver, Hodgson, Palmer, and Watts (2008). Students in Murray's study described the characteristics of good mathematics teachers as 'explaining well', 'positive characteristics–pleasant, kind, caring', 'understands/knows students as individuals', and 'does not rush'. Participant students in White, et al. (2009) said that 'explaining things well', 'being approachable', 'encouraging students to achieve', and 'talking to students as individuals' are important aspects of good teachers. Strikwerda-Brown, et al. (2008) found that students thought good teachers had positive personal characteristics, such as being kind and respectful.

In this study, students also stated that they learn better when the mathematics teacher teaches mathematics by relating it to real life and prepares concrete examples like pictures and graphics. Kaur (2008) who asked students to describe the qualities of the 'best mathematics teachers' found similar results. Students said the teacher 'explained clearly the concepts and steps of procedures' and 'made complex knowledge easily assimilated through demonstrations and use of manipulative, real-life examples'.

Teachers define good mathematics teacher in terms of how to teach mathematics. They put importance on both content knowledge and knowledge of teaching. They also emphasize that to be a good mathematics teacher, one needs to enjoy teaching. Ubuz and Sarı (2009) had similar results from teacher candidates. Knowledge of the subject and its teaching is one of the categorized opinions about being a good teacher. Li (2011), who examined elementary teachers' views about a good mathematics lesson, similarly found that mathematics teachers think a great deal about students and their learning. Teachers in our study also stated that a good mathematics teacher should be energetic. White, et al. (2009) found that participants identified being passionate and energetic about teaching as highly rated aspects of good mathematics teacher. Mathematics teachers participating in this study also underlined the importance of mathematical content knowledge and stated that a good mathematics teacher should be able to answer all questions of the students. However, it is interesting to note that participant students did not expect this from the teachers.

In terms of school administrators, a good mathematics teacher should have mathematics teaching ability; develop himself/herself professionally; communicate with students, colleagues and parents effectively; and obey the rules of institution. Although they place importance on meaningful understanding and teaching ability, they also emphasize teachers' working performance in terms of the institution's rules and professional development. This result is in line with what has been reported by Sanders (2002). According to Sanders's study, 16% of eighty schools stated 'desire for professional development' as a professional quality required. In addition, 13% of eighty schools stated 'knowledge of current development' as another professional quality required.

Figure 2 summarizes the views of students, teachers, and school administrators together.

According to Figure 2, the characteristics that students, teachers, and school administrators have in common are 'the ability to teach mathematics well' and 'help students to love mathematics'. Categories about the teachers' understanding approach and being positive emerged mostly in student interviews. The category in which teachers and students agree is related to the fact that students are not given much homework. While teachers focused on pedagogical issues, such as teaching mathematics and

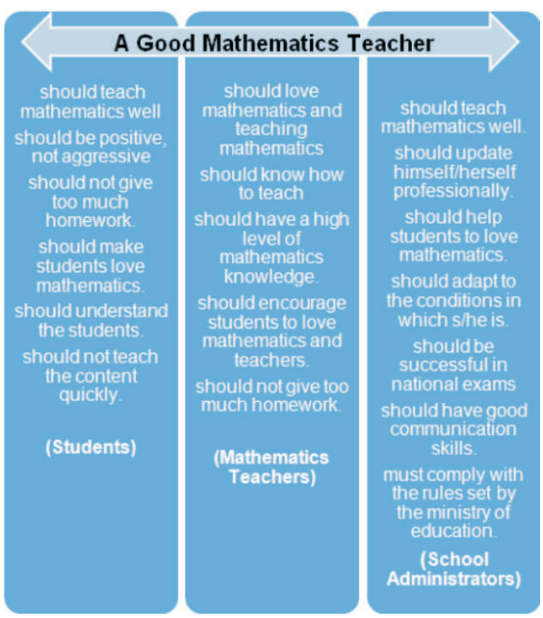

Figure 2. Characteristics of a Good Mathematics Teacher according to Students, Teachers, and Administrators

liking to teach mathematics, the school administrators considered the characteristics of teachers more broadly and focused on issues, such as communication with parents, professional development, and professional commitment. Mathematics teachers and school administrators disagree about student success in national exams. Mathematics teachers stated that the goal of a good mathematics teacher is not to make students pass the national exams, but to understand how mathematics is used in life. However, school administrators expect good mathematics teachers to help students be successful in national exams and said that if students' national test scores are low, the problem is with the teacher himself/herself. It has also been stated in the literature that society glorifies teachers whose students pass standardized tests (Bradley, 2000), which supports school administrators' views.

Recommendations and Limitations of the Study

This study shows its value as it provides the characteristics of a good mathematics teacher from multiple perspectives. However, it has some limitations. Firstly, the study is restricted by the limited number of participants. In order to fully understand the description of a good mathematics teacher, a larger and more diverse research group would be necessary. These results should be interpreted in their own context. With a wider range of participants, the results can be generalized to the extent of research expansion. Additionally, it would be necessary to conduct case studies in schools in which teachers', students', and administrators could be taken as parts of a whole.

One of the limitations of the study is the fact that what we think, say and do is influenced by perception and by experience (Prusaczyk, 2011). For instance, school administrators' or teachers' response to the interview questions may be influenced by conditions of the schools s/he worked up to now. For this reason, conducting interviews with a greater number teachers and administrators, who work at of different socio-economic levels, may lead to more generalizable outcomes.

As a result of this study, mathematics teachers and school administrators have defined a good mathematics teacher from different perspectives. It may be useful to take into

account these characteristics of the mathematics teacher in the future research to be done. It is also suggested that mathematics teachers should be educated not only focusing on the development of mathematical content knowledge and knowledge of teaching mathematics, but also based on the context of teaching and the expectations of school administrators and students in faculties of education.

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Appendix

Semi-Structured Interview Form

Dear participant,

This interview is about the characteristics of a good mathematics teacher. All of what you say in this interview process is secret. Please do not give the name of any person or school during interview. Your personal information can not be seen by anyone other than researcher. I will certainly not reflect on the report the names of the individuals when reporting the results of the research. Thank you for your participation.

1. How should a good mathematics teacher be?
2. What qualities do you like about (your) math teachers?
3. What are your expectations from mathematics teachers?

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