

A Multicultural view of Mathematics Male-teachers at Israeli Primary Schools

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Abstract. This study explores motives and role perception of primary school male-teachers who are Israeli-born, Ethiopians, immigrants from the former Soviet Union and Bedouins and are teaching mathematics at the south of Israel. The research method is based on qualitative-interpretive approach of case study type. The results illustrate common features of all teachers and at the same time differences between the cultural groups. The contribution of this study to mathematics teacher education resides in understanding motives and role perception of primary school male-teachers. It is recommended building teacher education programs which highlight the valued-social aspect, mathematics content knowledge and pedagogical knowledge.

Key words: men as teachers; multiculturalism; choice to teach; mathematics teaching in primary school.

1. Introduction

Feminization of the education system is increasingly growing both in Israel and abroad. In Israel the average percentage of male-teachers at schools in the Jewish sector is 19%. The highest percentage of male-teachers work at secondary school (30%) and the lowest at primary school (9%). In the Arab sector, the percentage of male-teachers amounts to 48% on average, 63% at secondary school and 43% at primary school. In teacher education institutions, 18% of the pre-service teachers [hereinafter: students] are men and these rates have been maintained on a similar level along the years (Ministry of Education, 2012).

The small number of male-teachers is an issue of concern among policy makers and education researchers around the world. Many researchers (Gilad & Millet, 2010) argue that men should fulfill a more significant role in education in general and in primary education in particular. This will provide a balanced response to the feminine environment and eliminate the gender stereotype through alternate

models of role models among male learners. Men should function as educational role models with the purpose of reducing disciplinary events and improving boys' academic attainments (Connell, 2001). The need for male role models at school is particularly prominent at primary school ages and it becomes even greater with the increase in the number of single parent households. Furthermore, male teachers are necessary in order to promote gender equality in the education system. The requirement to narrow the gender gap between male and female teachers in the education system is in line with the need for multicultural education, designed to offer equal educational opportunities to learners from a different ethnic, racial, cultural and social origin. Schools should reflect the communities in which they operate (Lameiras et al., 2006; Banks, & Banks, 2009; Gilad & Millet 2010; Ministry of Education, 2012). This study aims to explore the characteristics of the motives of choice and the teaching perception of men from different cultures in Israel who have opted to engage in primary school mathematics teaching.

2. Theoretical background

2.1 Motives for choosing the teaching profession

Numerous studies explored students' motives for choosing the teaching profession as a career. Generally speaking, researchers tend to divide these motives into extrinsic (wages, stable occupation, status and prestige, convenient working hours and holidays, influence of family members and teachers); intrinsic (natural aptitude for teaching, academic capability, love for children, pleasure derived from teaching); altruistic (wish to contribute to society, help children/adolescents, wish to be social change agents in the community) (DeCorse & Vogtle, 1997; Papanastasiou & Papanastasiou, 1997; Seng Yong, 1995; Su, 1996; Zembylas & Papanastasiou, 2005).

The social and cultural context can considerably impact students' motives for choosing the teaching profession as a career. For example, factors associated with wages were the most influential in choosing teaching as a profession in Zimbabwe (Chivore, 1988). Similarly, Seng Yong (1995) investigated the motives for choosing the teaching profession as a career in Brunei Darussalam. The students he interviewed attributed the greatest importance to external factors (e.g. lack of other options of learning subjects, influence of others, wages, stable occupation and convenient hours). Moreover, Seng Yong (1995) points out that,

...the motives for choosing the teaching profession are greatly affected by the status of this profession... in industrial or developed countries teachers no longer have the status they enjoyed in the past and teaching is not perceived as a distinguished career or a means for social mobility (p. 278).

A study conducted by a Cypriot couple of researchers (Papanastasiou & Papanastasiou, 1997) investigated the motives of American versus Cypriot students for choosing the teaching profession. The study found that the American students considered the internal motives as the most important whereas external motives such as benefits and professional prestige were deemed most important by their Cypriot counterparts. Differences in motives for choosing the teaching profession, stemming from a different cultural-occupational context, are also prevalent among students in the same country who belong to different ethnic groups (Ford & Grantham, 2003). For example, Su (1996) interviewed Caucasian and minority group students in California. About one third of the minority group students (as compared to none of the Caucasian students) viewed themselves as social change agents.

2.2 The education system from a multicultural point of view

Various cultures are encompassed in the Israeli society. This demographic differentiation requires a flexible system which complies with the cultural mosaics and the Ministry of Education policy (Millet, Golan & Dikman, 2012).

The Arab and Bedouin education in Israel

Education in the Arab sector has undergone changes since the establishment of the State of Israel. During the first years of statehood, there were only a very few schools in the entire Arab sector and only a small number of people studied in higher education institutions. Gradually, more and more kindergartens and schools were established, catering to learners from the 1st - 12th grades and offering varied options on the secondary school levels - agricultural, technological-vocational and theoretical pathways. Moreover, higher education in Jewish and Arab institutions became available to the Arab population in Israel. The place of girls in the Arab education system has been expanding since the establishment of the state. However, only in the last decade women enrolled in higher education institutions (Abu-Saad, 2005; Pessate-Schubert, 2003; Zeydan, Alian & Thorn, 2007).

Compared to the entire Arab sector, the Bedouin are viewed as a group which has adhered to customs and traditions of the Arab-Muslim culture for the longest period of time. The Statistical Yearbook of the Negev Bedouin (Center of Bedouin Studies & Development of the Negev, 2010) illustrates that, in the past, due to the nomadic way of life hardly any schools developed within the Bedouin community. During the period of the British Mandate (1921-1948), the first schools were set up among the major tribes and only sons of rich sheiks studied there. With the establishment of the State of Israel, only 150 Bedouin children went to school and the number of educated people in the Bedouin sector was extremely small. In 1981, the Minister of Education and Culture appointed an "Education Authority for the Negev Bedouin". It was in charge of municipal management of those schools which operated outside the jurisdiction of any local and regional authority. The objective

was to narrow the gaps between the Bedouin education system in permanent settlements and in concentrations of nomad Bedouin population – constituting over one third of the entire Bedouin population in the Negev. Out of the teachers working in the Negev Bedouin sector, about 30% are not local. In the past, Arab teachers used to come to the south without any experience and after acquiring minimal competences they would go back to their place of residence in the north, entailing a very high teacher mobility. However, in recent years, this trend has been undergoing a change due to the fact that Bedouin women have been joining the teaching profession (Ministry of Education, 2012).

Education and Ethiopian immigrants in Israel

The process of absorbing Ethiopian immigrants in the various educational frameworks met with many difficulties. Studies mainly conducted by Szold Institute and the Institute for the Nurturing of Education, Hebrew University of Jerusalem, point out the following complications: reading comprehension, social problems between Ethiopian children and children who have lived in Israel for many years; problems in the learning process, e.g. independent work, initiative, imagination, concentration, request for help, teachers' attitude. Moreover, there is a rather high percentage of 1st graders who have problems of learning and acquiring a language, thinking, learning and communication skills as well as attitude towards time, environment and authority (Ben-Ezer, 2002). The entirety of changes and processes of the information revolution and technological development have obliged the education system to apply renewed and creative thinking relating to the place and role of teacher education programs. These programs are designed to prepare the heterogeneous learner population for professional training and integration in an educated and advanced society (Cochran-Smith, 2000).

The concept of pluralism and education for multiculturalism embodied in the training formats is manifested by the development of unique education programs for Ethiopians. The fundamental assumption underlying the need to initiate an Ethiopian teacher education pathway is offering a population from a difference background, culture and socio-economic status an equal opportunity for studying, acquiring a profession and joining the labor market (Millet & Gilad, 2004). Furthermore, in recent years, we have witnessed a high demand for educating Ethiopian pre-service teachers. Out of approximately 130 000 teachers working in the education system from kindergarten to secondary school, only about 150 Ethiopian teachers were integrated, 62 of them in kindergartens (Ministry of Education, 2012).

Education of immigrants from the former Soviet Union

Since the beginning of the 1990s, with the renewed immigration waves from the former Soviet Union, immigrants' absorption has been defined as a national challenge and normative value in the Israeli society. This placed the education

system as a framework committed by its very essence to play a major role in making this process succeed. Recently, both primary and secondary schools have successfully absorbed teachers from the former Soviet Union who have a high self-image as mathematics teachers. In order to help these teachers to join the labor market, the Ministry of Education initiated courses for immigrant-teachers. In these courses the teachers study the culture and history of the People of Israel and the State of Israel. In addition, they acquire teaching methods as well as pedagogy associated with their subject of specialization in the former Soviet Union, mathematics in our case (Patkin & Gesser, 2002).

Immigrant teachers from the former Soviet Union attest that mathematics teaching in Israel differs from mathematics teaching in their country of origin. They emphasized that discipline in class was different and they believed it was a prerequisite for promoting learners' attainments and managing lessons in the best way (Levenberg & Patkin, 2001). Michael & Shimoni (1994) characterized the immigrant-teachers from the former Soviet Union by the following features: a. personal details indicating high academic education and previous experience in teaching; b. pedagogical approaches which highlight frontal teaching, memorization, strict discipline as well as mainly enhancing the achievements of the prominent learners in the class; c. difficulty to be integrated in free and open frameworks in the educational space. Recently, after a 2-decade absorption process, the emerging picture is of a reality whereby teachers from the former Soviet Union succeed in mathematics teaching and functions at school, creating a highly positive image among their Israeli-born colleagues, the children and the parents (Rosenbaum-Tamari, 2004).

2.3 Mathematics education at primary school

Mathematics is a complex subject and stereotypically perceived as difficult and challenging. Mathematics teachers are required already at primary school to be versed not only in mathematical but also to have pedagogical-content knowledge and be acquainted with learners' ways of thinking (Casas, Verissimo et al., 2012; NCTM, 1989, 1991). Mathematical foundations are necessary for everyone in modern society, even if they do not become mathematicians or scientists (Harari, 1992). Hence, children should learn and understand mathematics already at primary school. The teachers who are responsible for the way the pupils' mathematical knowledge is built at the beginning of their way, should be specialized in teaching the subject of mathematics. Furthermore, making mathematics lessons at primary school attractive and creative, combined with games and humor, is essential to a successful lesson and promotion of attainments. This contradicts the common and perceived opinion of mathematics teachers who find themselves in a race to meet the standards of the School Effectiveness and Growth Indices (Ministry of Education, 2009). In Israel, mathematics has recently become one of the central issues on the public agenda. This is mainly due to the fact that scores of international tests show that Israeli pupils are not ranked high among

the countries who take these tests. Teachers undoubtedly have strong influence on the way pupils learn mathematics and teacher education has definitely an essential role in the pupils' ability to learn (Casas, Verissimo et al., 2012; NCTM, 1991).

The Ministry of Education (2009) maintains that the key to promoting mathematics education resides in the quality of teachers. Consequently and based on the Harari Report ("Tomorrow 98"), a mathematics professionalization program for primary school was implemented in 2002 all over the country. The program aimed to enrich mathematical knowledge, introduce innovative mathematics teaching methods and thus improving academic achievements of the education system learners. Neshet & HersHKovitz (2004) present three main dilemmas in the professional education of mathematics teachers at school: a. gap between pedagogical and content knowledge – the content knowledge of mathematics teachers at primary school level is limited to what they have learnt in the past and to a small amount of knowledge acquired during the teacher education program. They are more specialized in primary school pedagogy; b. the gap between teaching objectives and teacher's feelings – teachers who attend in-service mathematics training courses engage more in mathematical knowledge rather than being involved in an experiential and successful mathematical learning; c. the gap between mathematics and the elitist perceptions of the subject – mathematics is perceived as a subject destined for few people and only the gifted and good pupils are successful in mathematics teaching. Based on these beliefs, teachers encounter difficulties in promoting all children in class (Neshet, 2012). Another study (Jasmine & Marcy, 2011) illustrates that the entry of primary school mathematics teachers into a pedagogical world re-shaped according to the reform in mathematics, is associated with building their professional identity. The study presents three cases out of a class of primary school mathematics teacher education. In the described cases which occurred in the United States, the tutors offer new definitions to the role of "teacher" and "child". The students discuss the new models of identity and mathematical terms and implement the role definition in various ways (Jasmine & Marcy, 2011).

In addition to the above dilemmas and in order to comprehend the complex state of mathematics education, we should understand the different approaches to mathematics education at primary school since it is the basis for the degree of success further on in the learning process. According to Yona (2011), the approaches to mathematics education are: the West-European approach, inquiry approach, discrete values approach and mediating approach. The West-European approach – underscores the principles of systematics, practice and memorization. The inquiry approach – highlights the principle of thinking and finding multiple ways for solving problems and mathematical exercises by learning out of pleasure. The discrete values approach – underscores the principle of finding structured models not in the natural environment of solutions, instead of a direct and simple learning. The mediating approach – emphasizes the principle of mediation whereby an interactive process takes place between pupils and teachers. The objectives

according to this approach are: building thinking constructs, learning habits and developing the learners' potential capabilities, developing mathematical literacy, consistency, awareness of processes, flexibility according to pupils' needs and involving the children in the learning process.

Research question

What are the characteristics of the motives for choice and teaching perceptions of men from various cultures in Israel who have opted to engage in mathematics teaching at primary school?

3. Methodology

3.1 Research method

The research method of this study is qualitative-interpretive of the case study type. A case study is used in teaching and learning research. One of the important advantages of a case study is its ability to provide insights about incidents in the contexts and physical sites where they transpire. Cultural and social incidents can be fully understood only if they are studied from the participants' point of view and from the way those actively involved see them. Data collected from the participants can in fact be depicted as insufficient. However, they definitely facilitate comprehension and understanding of the thoughts and feelings of a small group as well as of their attitude and approach (Shkedi, 2005; Smolicz & Secombe, 1990).

3.2 Research population

The research population consists of eight male-teachers who teach mathematics at primary school. The teachers represent different cultures, two teachers from each culture: Israeli-born, Ethiopians, immigrants from the former Soviet Union and Bedouins.

Our decision to focus on in-service teachers is based on the assumption that they have experienced teaching for at least two years. They are capable of relating to the teaching and multicultural perception of themselves as being shaped out of the point of view of personal experience. The participants were between 28-62 years old and their seniority ranged between 2-19 years. Two teachers, one from the former Soviet Union and the other a Bedouin, have made a career change to teaching. One of the Israeli-born teachers is religious, defining himself as a teacher in a religious school. All the teachers work at the south of Israel and have been randomly chosen.

3.3 Research tools

In order to identify the motives for choice and the professional perception of mathematics teaching at primary school we used a semi-structured in-depth interview. The interview questions focused on: a. the teachers' personal background, the motives for choosing their profession and their attitude towards the different motives leading them to make the decision to study teaching and education; b. the teachers' teaching perceptions and mainly what does 'being a mathematics male-teacher at primary school' mean for them; c. the teachers' perception of mathematics teaching seen from the perspective of the culture from which they come.

3.4 Research procedure

Collecting the data about the motives for choice and professional perception of the male-teachers was performed through personal interviews. The interviews were conducted by the researchers, after randomly dividing the participants between them. This procedure was done in order to prevent bias. The interviews were in Hebrew and took place at an Academic College of Education. Each interview lasted about an hour. The interview built for the purpose of this study is based on the study of Millet (2001).

3.5 Data processing

The interviews were content analyzed as is customary in qualitative research (Shkedi, 2005). The categories were defined on the basis of previous studies which investigated the motives for choosing the teaching profession and perceptions of mathematics teaching at primary school (Gilad & Millet, 2010). A qualitative-interpretive content analysis was performed on the open-ended interview questions. The categories were obtained after the researchers concurred about them at a level of agreement of no less than 67%. The analysis was performed on the following levels: the single interview level, the ethnic group level and the entire participant group level (Shkedi, 2005).

4. Results

4.1 Perception of mathematics teaching and motives for choice of mathematics male-teachers at primary school

The interviews analysis illustrated features which were common to all the male-teachers investigated in this study. Moreover, the interviews showed differences between the cultural groups with regard to the teachers' motives for choice and their perception of being mathematics teachers at primary school.

Results common to all the investigated male-teachers

All the investigated mathematics male-teachers indicated more than one motive for choosing to teach mathematics at primary school. They also specified varied perceptions. The entirety of the mentioned motives and perceptions can be divided into three categories:

- a. Extrinsic perceptions and motives: wages, stable occupation, occupational status, professional prestige as it is perceived in the Israeli society, influence of family members and teachers.
- b. Intrinsic perceptions and motives: love for mathematics, high academic competence in mathematics, natural gift for mathematics teaching, love for the children, pleasure derived from mathematics teaching.
- c. Ideological-altruistic perceptions and motives: wish to contribute to society, wish to help learners to cope with mathematics learning, reducing fear of this subject, wish to be valued-social change agents in the community by demonstrating the beauty embodied in mathematics.

Reference to the teaching method was also common to all the investigated teachers. They believed that different teaching approaches should be adopted according to different pupil populations in order to obtain high attainments, in spite of the obstacle of the School Effectiveness and Growth Indices and the standards. That is, individual, group and whole class work as well as combination of various approaches prevalent in mathematics education, such as memorization and practice, inquiry and mediating approaches.

Results according to cultures

Below is a description of the perception of mathematics teaching and motives for choice among Bedouins, Ethiopians, immigrants from the former Soviet Union and Israeli-born teachers.

4.2 Bedouin teachers' perception of mathematics teaching at primary school and motives for choosing the teaching profession

Among the Bedouin teachers, the role perception and motives for choosing the profession were both extrinsic and intrinsic.

Stable occupation

The perception and motives found in the Bedouin sector were the need for finding a stable occupation as well as limited career options for male high school graduates.

For example, one of the teachers said: "I chose to become a mathematics teacher because I had no other option. I could not actualize my dream to study pharmacology abroad... and if I have decided to teach, then teaching mathematics is very distinguished".

Or a second teacher told: "I studied construction engineering and did not find myself and I switched to teaching... and then the career change is the nearest to the subject of mathematics".

Natural inclinations and wish to help others

The two teachers pointed out that for them being a mathematics teachers implies being meaningful to the learners. One teacher said: "I view myself as someone who delivers a very valuable material to the pupils... there is an important part in consolidating a better future for my pupils so that they can cope with life... mathematics is a unique and special language... I like mathematics and I love teaching mathematics. Working as a teacher gives me great satisfaction, pleasure and motivation".

The second teacher explained: "For me, being a mathematics teacher means promoting the pupils and preparing them for academic studies... Mathematics constitutes an 'entrance ticket' to university... I teach them techniques for solving problems and exercises, we practice logical thinking and building a connection between comprehending mathematical text and the solution technique".

The words of the two Bedouin teachers attest to the wish to be a social leader and help others. The wish to be a socialization agent is illustrated much more emphatically by the second teacher: "... first of all I have the inclination to teach and, thus, to introduce changes for the better within society. I see that our society, the sector in which I live, needs good teachers and particularly teachers of mathematics since mathematics is the basis for everything... Moreover, it is highly considered in the Bedouin society".

4.3 Ethiopian teachers' perception of mathematics teaching at primary school and motives for choosing the teaching profession as a career

Among the Ethiopian men the extrinsic perceptions and motives were prominent.

Past teachers and home-class teachers as a role model

The Ethiopian teachers indicated that when they chose the teaching profession they were influenced by the figure of their past teachers. One teacher told that: "As a new immigrant I had a mathematics teacher who was interesting and the subject was exciting. I asked myself if I could be like her. She made me fall in love with mathematics... I have a challenge to become a mathematics teacher... to influence my learners at primary school".

A second teacher said that he was influenced by his father who encouraged him to become a teacher: "Father is a dominant figure at home and he inspired me to become a mathematics teacher. Father who worked in the municipality in Ethiopia

understood the importance of education and the importance of being a mathematics teacher at primary school which is the basis for success in life".

Pride for the Ethiopian ethnic group

The Ethiopian teachers who participated in this study maintained that it was important to be mathematics teachers and, especially, at primary school. One of teachers claimed: "I am going to be a role model for the young generation, for the community. They can be proud of themselves when they see Ethiopian teachers, mainly mathematics teachers... the children have something to strive for... they will also want to become mathematics teachers and it is important both for the Ethiopian society and the Israeli society".

The second teacher expressed himself in similar words: "I set a challenge to my pupils at school, a challenge to be like me, a mathematics teacher, a challenge which is feasible. If I succeeded so could they. You don't have to be afraid of mathematics".

Being a mathematics teacher wins a lot of respect

The Ethiopian mathematics teachers indicated that one of the motives for choosing teaching as a profession is respect, particularly for mathematics teaching. Among Ethiopian immigrants, both in Ethiopia and Israel, teaching has been perceived as a respectable profession and teachers have always been appreciated. Along these lines, one of the teachers said: "In Ethiopia I studied until the age of 15 and there teachers were very respected. I always thought that I would like to be teacher because teachers were respected by everyone. Teachers are highly respected, even more than the parents... Teachers are something special and mathematics teachers even more so".

Role perception by male-teachers

Based on the experience they have accumulated during the teacher education program and in public and communal work, the Ethiopian teachers are quite confident of their success as teachers and home-class teachers in future.

One of the teachers reiterated: "I have something to sell, I know my value. I see myself at the center of matters at school and am confident that I will succeed". He added that: "In Ethiopia I was not acquainted with many Ethiopian female-teachers and most of the teachers were men. Also here in Israel I believe that a home-class teacher should be a man. When you teach mathematical contents the gender of the teacher is not important. But home-class teachers should be men.

4.4 Perception of mathematics teaching at primary school and motives for choosing the teaching profession as a career among teachers from the former Soviet Union

Among the men from the former Soviet Union the intrinsic perceptions and motives were prominent.

Mathematical excellence

The teachers indicated the relation between being immigrants from the former Soviet Union and being mathematics teachers at primary school.

One of the teachers said: "After working as an engineer with a 30-year background in the electronics industry, I decided to make a career change and chose mathematics, a subject in which I can be integrated without having to acquire the lacking knowledge... my skills and learning habits allowed me to come to school with an authority of knowledge and ambition to encourage my pupils to grow higher and farther".

The second teacher underscored the importance mathematics has for life and the importance of mathematics education: "I have the will to educate for excellence in mathematics and influence the future generation... understanding that mathematics is a main and essential tool for pupils in order to be integrated into society. Mathematics enables logical thinking and creative thinking and persevering in mathematics studies is a key to entering the world of higher education".

Self-discipline in learning

The teachers told that, for them, being mathematics teachers means navigating towards areas in which the pupils would probably develop throughout their adult lives.

One of the teachers stated that: "In the course of my work I could contribute to my pupils from the vast experience which I had accumulated while working as an engineer and now as a mathematics teacher... As a learner who studied and was educated in the Soviet Union I highly consider practice in teaching processes... I require discipline from all the pupils and think that this will help them to study and make progress".

The second teacher too emphasized that the methods to which he had been exposed as a learner in the Soviet Union have a record of success: "In my opinion, the way to success is based on intensive and systematic work with a lot of self-discipline and responsibility for self-improvement... Pupils must understand that they come to school in order to study and not in order to disturb... to study and advance".

Self-image

The results illustrate that teachers from the former Soviet Union maintain they are specialized in mathematics as far as area of knowledge and teaching methods are

concerned. One teacher specified: "Being a mathematics teacher at primary school is also a symbol of academic prestige because mathematics is the mother of all the learning and research subjects... mathematics is indefinite and unfathomable".

As male-teachers at primary school and in the staff room they feel very 'masculine': "I know and am aware of my place at school... the female-teachers always ask my advice in the fields of mathematics and pedagogy". The other teacher also relates to the issue of professional and gender prominence. In his opinion: "I feel like a king in the chicken coop...".

4.5 Israeli-born teachers' perception of mathematics teaching at primary school and motives for choosing the teaching profession as a career

The Israeli-born teachers emphasized ideology as the main motive for choosing mathematics teaching as a profession, combined with their wish to influence society and be change agents in the community.

Ideological motives

The results indicate that all the Israeli-born teachers highlight the ideological motive in their perception and choice of the teaching profession. They argue that the teaching profession in general and mathematics teaching at primary school in particular will allow them to influence and change.

According to one of the teachers: "First and foremost comes the need to change and influence and this should already start at primary school... I don't know if it is associated with my character or the society in which I grew up or the environment where I have lived all the years. But I am deeply concerned with what is transpiring in the western Israeli society of the years 2000... I think that education and the subject of mathematics carry a great weight in changing and improving our society. As a future father I want my children to grow up in a better place". This teacher told that when he was at school he had the opportunity to enjoy good education: "I chose mathematics teaching at primary school mainly due to ideological reasons. I like working with children. I am not interested in money although I know that I will make money in another way (giving private lessons of mathematics and computers)".

Self-image

The results show that the Israeli-born teachers do not settle for teaching but aspire to promote themselves to management level. They see teaching as a jumping-board for management positions in formal and informal frameworks. In light of the experience they have acquired during the military service and their civilian life, they feel rather confident of their success as mathematics teachers and home-class teachers.

One of the teachers restated that: "As a man I have advantages over female-teachers. In the staff room at school I am a single male-teacher, not just a teacher but a mathematics teacher, so I am highly appreciated and have no competition. I am more confident in the company of women".

Another teacher expressed himself in a different way: "As a mathematics teacher, I feel that I am strong, authoritative, dominant... I think that a male-teacher is suitable to primary school... I can better control".

A religious teacher describes the relation between mathematics teaching and the Jewish bookcase. He maintains that: "Mathematics is connected to my spiritual religious world... learning the *Gemara* (literally 'completion', the second and supplementary part of the *Talmud*) which is a highly important layer in the Jewish bookcase, is entirely based on mathematical-logical thinking... study inquiry in the *Gemara* is similar in its ways of thinking to the inquiry of a mathematical problem. Moreover, the *Gemara* examines all the options for solving the issue while rejecting some of them based on logical thinking... I present *Gemara* issues in mathematics lessons, showing the pupils the features which are parallel to mathematical thinking".

Summary of the results is presented in Table 1.

Table No. 1: Prominent perceptions and motives of primary school mathematics teachers from a multicultural perspective

	Israeli-born	Bedouin	Ethiopian	Immigrants from the former Soviet Union
Intrinsic motives	Ideology Change agents Natural aptitude for teaching Love for the children	Love for the subject	Respect for teachers Change agents	Education for excellence Knowledge and mastery of the subject
Extrinsic motives		Wages Stability	Role model Pride for the ethnic group	

5. Discussion and conclusions

The present study focused on comprehending the educational, familial and social reality to which the men who chose primary school mathematics teaching as their occupation were exposed. Moreover, the study

demonstrated their perceptions and role. The research assumption was that the results were significant and beneficial to those educating pre-service teachers for primary school mathematics teaching and to the professional development of the latter during their practice as male-teachers.

This study is a case study investigating eight male-teachers from different cultures. The interviews analysis illustrated common features of all the research participants. It also showed the differences between the various cultural groups with regard to perception of teaching and the participants' motives for choosing to teach mathematics at primary school.

Common features of all the investigated male-teachers

More than one motive for choosing to teach was demonstrated by all the investigated male-teachers. This result is in line with the professional literature dealing with male-teachers' perception of teaching and the motives for choosing this profession (Papanastasiou & Papanastasiou, 1997; Su, 1996). Most of the male-teachers indicated that figures of male and female teachers from their past were some of the motives influencing their choice of the teaching profession. This result is corroborated by a study of novice teachers (Millet, 2001). All the investigated teachers stated the importance and prestige of teaching mathematics at primary school. Furthermore, they pointed out the perception that various teaching methods should be adopted in accordance with various pupil populations in order to obtain high attainments (Yona, 2011).

Unique results obtained from the different men groups from a cultural point of view

The social and cultural context can strongly influence teachers' motives for choosing teaching as a profession and career as well as the role perception of mathematics teaching.

Bedouin male-teachers – the role perception and motives specified by this group were both extrinsic and intrinsic. As the main motive, they mentioned the need for stable occupation and the love for mathematics. They added that teaching mathematics at primary school was their vocation in the Bedouin society. These results concur with the professional literature about minority groups and their options for choosing and finding an occupation (Zeydan, Alian & Thorn, 2007).

Ethiopian male-teachers – the Ethiopian teachers also indicated both extrinsic and intrinsic motives: influence of teachers from their past, perceiving mathematics teaching as a respectable profession, wish to serve as a role

model in the ethnic group and be social change agents in the community. These results concur with a study conducted among Ethiopian pre-service teachers (Millet & Gilad, 2004).

Male-teachers from the former Soviet Union - these teachers underscored the intrinsic perceptions and motives. The results corroborate studies of teachers from the former Soviet Union in general and mathematics teachers in particular (Levenberg & Patkin, 2001; Michael & Shimoni, 1994).

Israeli-born male teachers - these teachers emphasized ideology as the main motive for choosing to teach mathematics at primary school. These results are in line with a study conducted among Israeli-born, Bedouin and Ethiopian students (Gilad & Millet, 2010).

This study has implications from several points of view: mathematics teaching from the cultural aspect, mathematics teaching from the gender aspect and mathematics teaching in teacher education, in-service training courses and in the field of education.

The main research conclusions of this study are that the motives and perceptions of male-teachers choosing to teach mathematics at primary school are varied, comprising extrinsic, intrinsic and ideological-altruistic motives and perceptions. Moreover, mathematics male-teachers from different cultures perceive the subject of mathematics in a different way. The Israeli society, which constitutes a meeting point of demographic and cultural differentiation, requires a flexible system in compliance with the fabric of cultures and the Ministry of Education policy.

Based on the research findings, it is recommended planning teacher education and professional-mathematical development programs which highlight the valued-social aspect of the mathematics teaching profession. Such programs may convince men to choose this profession. As mentioned before, an increase in the number of male-teachers in the education system will bring about an educational and social balance in the class and at school, increasing teachers' prestige in the Israeli society. Moreover, the researchers recommend investigating further the teaching-learning of primary school mathematics male-teachers from various cultures. This may constitute a key to a change in the subject perception and its teaching as well as promote primary school learners' attainments.

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