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Integration of Higher Order Thinking Skills into the Arab Education System in Israel: a General Perspective

*Amgad Seif**

Author information

* Computer Science Department, Al-Qasemi Academic College of Education, Israel. Email: amgad_seif@yahoo.com

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Integration of Higher Order Thinking Skills into the Arab Education System in Israel: a General Perspective

Amgad Seif

Abstract: This qualitative literature review represents the first attempt to show the history of the Arab public education system in Israel from the angle of the development of higher order thinking skills (further: HOTS). A brief outline is provided of the Education Ministry's policies and public activities considered to influence the quality of education in the Arab education sector. The review highlights the main perspectives of Israeli Arab and Jewish authors on Arab education. Data were analyzed through the use of the thematic framework developed on the basis of the previous Israeli research on HOTS. Findings show the challenges that the Arab education system faces in creating the HOTS-based learning environment. These include cultural/traditional differences between Arab and Jewish sectors, political factors, economic discrimination against the Arab education sector, and the failure of some of the local authorities to improve the level of school education. As a result of government policies and insufficient amount of research data, the conditions are not created for developing the HOTS of Arab students through studying civics and humanities, including the issues of Palestinian Arab history and heritage. Recommendations are provided regarding the implementation of the HOTS-based educational strategies in the Arab education system.

Keywords: Israel's education policies, Arab education system in Israel, higher order thinking skills, teaching civics and humanities

Introduction

The research on integrating HOTS into the Israeli Arab education system is rather scarce. Over decades, a number of Arab and Jewish scholars have attempted to highlight the education processes and outcomes in the Arab sector. Some of the studies are focused on functional and structural issues in the Israeli Arab education system (Abu-Asbah, 2012; Jabareen, 2006; Leavy, 2010). Other authors examined learning contents in the textbooks written for Arab schools (Al-Haj, 2005; Mahamid, 2017), with an accent being made on the political and cultural oppression of the Arab minority in Israel. The matter of developing the HOTS of teachers and students in the Arab education system was rarely touched upon in academic papers and public discourse, although some criticism was voiced with regard to teaching and learning methods in Arab schools. It is only during the recent decade that Israeli Arab educators have focused their attention on developing the HOTS-promoting strategies in teacher training programs and in school disciplines (Amer, 2011; Daher & Baya'a, 2015; Obaid & Amir, 2013).

There is an ever-growing awareness that in order to meet the demands of the contemporary world, schools have to prepare students to be effective thinkers in a variety of areas. Like in other countries, efforts have been made in Israel to implement reforms and various education projects to promote HOTS as the key element of instruction and learning (Gallagher, Hipkins & Zohar, 2012). In addition, there are many complex political and social issues that citizens must face and, therefore, the cultivation of students' HOTS in social disciplines is considered an effective means for developing responsible citizenship (Dam & Volman, 2004; Zohar, 2010). It is claimed (Abu-Hussein, 2015; Huleihil & Huleihil, 2016), however, that the overall situation in the Arab education sector, and particularly the results of integrating HOTS in the education system, are far from being satisfactory in terms of curriculum content, teaching methods and student academic achievements.

The current paper pursues the goal of addressing the paucity of information in the research on HOTS in the Arab education sector in Israel and attempts to create an overall picture of the developments in this area. The question was investigated of what factors have contributed to or detracted from integrating HOTS into Arab education over the decades of developing the public education in Israel. The review results created the grounds for mapping out recommendations expected to be used by decision makers and educators in designing their policies and enhancing their contribution to the success of Arab education.

Theoretical framework

In order to answer the research question with adequate validity and design recommendations, the need emerged of a sound theoretical framework that would underpin the process of literature search. The theoretical perspectives that represent the foundation for the current review are rooted in conceptual and research-based literature, falling under two broad related categories: educational policies based on the constructivist philosophy of learning and concepts of education in multicultural society. The former provides the foundation for the “Pedagogical horizon” (2007) reform that outlines the Israeli Education Ministry’s policies in integrating HOTS in the public education system (see Findings, first section, par.6). The reform adopts a broad conceptualisation of higher order thinking that encompasses cognitive, metacognitive and affective knowledge (dispositions), and skills that are necessary for students to effectively function in society (Facione, 1990; Perkins, 1992; Resnik, 1987). The principles that underlie the constructivist philosophy of learning assert that students need to be active constructors of knowledge rather than passive recipients of information while teachers act as facilitators of learning. Teaching HOTS is also considered a powerful and necessary means to educate socially responsible citizens (Zohar, 2008; 2010).

Another category of theoretical framework is concerned with the concepts of education in a multicultural society. The author of this paper shares the concept that educational goals for multicultural societies should involve three core values: recognizing difference, national cohesion and equality (Blum, 2014). Recognition of difference acknowledges ethno-cultural distinctiveness and in educational contexts, it encourages mutual engagement across difference. National cohesion implies teaching a sense of civic attachment to both a nation and one’s fellow citizens of different ethnic groups. Equality requires equal treatment by teachers of students from different ethnic groups and relative equal student outcomes among different groups. Other researchers (Al-Haj, 2005; Bekerman, 2004; Spolsky, 1997; Yonah, 1998) concur, adding that sociopolitical equality is critical to all groups of a multicultural society in which a positive attitude should be adopted towards the wish of individuals and communities to preserve their diversity. At the same time, an inward-looking, critical analysis is crucial for the sustainable development of the ethnic group culture (Abu-Asbah, 2012; Lamm, 2000).

The two categories of the theoretical framework are related in that the HOTS-based strategies for the development of thinking dispositions are necessary for educating students in a multicultural environment. Fostering such attitudes to thinking as being open-minded, flexible, trustful of reason, honest in facing personal biases, and tolerant of others views can help students acquire an essential competence for participating in a democratic society (Paul &

Elder, 2006). To a great extent, the above ideas were reflected in the Kremnitzer committee recommendations (Ministry of Education Culture and Sports, 1996) which sought to promote the ideas of cultural pluralism in Israeli public education (see Findings, first section, par.4).

Methodology

This paper is written in the form of a systematic qualitative literature review which attempts to present, analyse and synthesize material from a wide range of sources in order to identify what is of significance for the question at issue. The purpose of this kind of review is to do a search for themes that can be identified primarily in qualitative studies, providing qualitative evidence synthesis (Grant & Booth, 2009). In addition, a number of quantitative (Abu-Hussain & Abu-Hussain, 2018; Daher, Tabaja-Kidan & Gierdien, 2017) and the mixed method (Abu-Hussein, 2015) studies were used, with a focus being placed on the concepts that are relevant for the purpose of this review. The review presents a variety of papers by Israeli Arab and Jewish scholars and a number of Israeli newspaper articles concerned with the Arab education in Israel¹.

Theoretical perspectives that constituted the framework became the grounding base for a thematic framework used to manage and analyze the literature. This initial framework contained the themes drawn from the “Pedagogical horizon” policies and a priori research into HOTS (Seif, 2017), and from the research on education in a multicultural society. The framework was employed then in the analysis of the documents produced by the Israeli Ministry of Education and public organizations in the area of public education and Arab education system in particular, and to the studies by Arab and Jewish authors in the domain of Arab education. At further stages of analysis, additional themes were identified, reflecting the situation in Arab education across several decades and problems in implementing the HOTS-based education policies. Subsequently, findings were organized to display the factors considered of importance to the quality of Arab education, particularly to the development of HOTS¹.

Findings

Implementing changes through the government and public policy efforts

The story of the Arab education in Israel is as long as the history of the state itself, with achievements and problems related to socio-economic and politi-

¹ A large number of sources were consulted for the review: Google Scholar, ERIC, ResearchGate, and the Macam Gateway Services of the Mofet Institute (Israel). A literature search included the reports and publications issued by the Israeli Ministry of Education over 60 years. The majority of papers are from peer-reviewed journals published in English and Hebrew, and there are some sources published in Arabic.

cal issues. Since the foundation of the state, provisions of the 1949 Compulsory Education Law have ensured free education to all the children in Israel, including those aged 16-18 who did not complete their regular schooling. The law set up the principles of the school education in the country, creating a highly centralized education system. This act introduced the core curriculum as well as additional curricula which promoted universal values: development of the child's personality, abilities and creativity by studying various disciplines of knowledge, and the arts. Both laws created a framework of public education in a newly-established and war-devastated state. There were severe economic difficulties throughout the country in which educational infrastructure was minimal at best. Particularly in Arab communities, there were very few schools and certified teachers (many of whom left the country because of the war) and parents themselves were poorly educated.

Separate education sectors were established: for religious and secular Jewish children and for Arab children, with each sector including both public and non-state schools. The language of studies for Jewish children is Hebrew, and Arab schools teach in Arabic. Children from Arab families are not legally barred from attending Jewish schools, but this happens quite rarely and only in the cities with a high rate of a mixed Arab-Jewish population (Iram, 2014). It was determined by the State Education Law (1953) that the place of Arab education is within the state education system and under the responsibility of the Arab Education Division of the Ministry of Education. Since then, all aspects of the Arab school education have been determined by Jewish educators and policy makers. No autonomous system run by Arab educators was allowed to meet the needs of the Israeli Arab community as a minority with a distinct culture, history, and traditions. Inequalities between Jewish and Arab sectors have continued for decades, greatly to the advantage of the former (Follow-Up Committee on Arab Education in Israel [FUCAE], 2000; 2011). For almost two decades (1948-1966), education in the Arab-populated areas in Israel has been subjected to the conditions of the military administration. This regime greatly limited the civil and political freedoms of an indigenous Palestinian Arab population (Rekhess, 2007). A system of strict control was imposed over the Arab school administration and teacher staff in order to eliminate any signs of resistance to official policies and discourage free discourse on political and social issues.

Since the mid-1960s, a number of reforms have been implemented to improve education in the Israeli public school sector. On the basis of the inquiry-based American BSCS curriculum, learning by inquiry in science disciplines was introduced in Israeli schools, signifying the integration of HOTS in the school curriculum. This was followed by the STS (Science, Technology and Society) program launched in the 1980s and guidelines on the development of the principles of science education (Harari, 1992). Both programs

have guided science education in Israeli public schools since the 1990s, promoting the development of students' HOTS in mathematics and sciences. In those decades, education situation in the Arab sector was still bleak. Various public organizations and committees began to raise the awareness of the Arab community about educational issues and act to increase the efficiency of the Arab education system. Among the purposes of the FUCAE was the elimination of discrimination against Arab education in terms of resources allocation and recognition of the historical and cultural heritage of the Palestinian Arab population (FUCAE, 1997). In addition, its goals included achieving a sufficient degree of independence of Arab educators in creating pedagogic policies relevant to the needs of Arab population. Other organizations like "Sikkuy" (The Association for the Advancement of Civic Equality in Israel) and Adva Center have been working over decades to eliminate inequalities between the Arab and Jewish sectors and promote democratic values.

As a result of the Palestinian national movement in the occupied territories and political developments in Israeli society, which resulted in the 1993 Oslo Accords, some changes were made to the history and civics curricula in Israeli public educational institutions. In 1984, the Education for Jewish-Arab Coexistence Program was introduced by the Ministry of Education, with the aim of creating a more democratically oriented curricula in civics and history. For the first time, Palestinian Arabs were portrayed not only as enemies, but also as victims of the Israeli-Arab conflict (Salama, 1999). Civics education adopted more pluralistic notions than their predecessors, aligning the ideas of tolerance and pluralism with the recognition of the State of Israel as a Jewish state (Eden, Ashkenazi & Alpersen, 2001). Schools were recommended to develop a culture of discourse that would cultivate tolerance of other's beliefs and teach for peaceful conflict resolution (Ministry of Education Culture and Sports, 1996). In practice, however, teaching of civics did not change significantly. The Education for Jewish-Arab Coexistence Program was supposed to increase the number of classroom hours in order to accommodate the new material, but the number of hours of civic education remained the same, and there was a lack of textbooks. The recommendations developed by the Kremnitzer committee (Ministry of Education Culture and Sports, 1996) promoted the ideas of cultural pluralism, commitment to democracy, and analytical approach to social and political issues. However, the new civics curriculum (Eden et al., 2001) emphasized that the Jewish identity of the state was more important than its democratic identity, downplaying the role of Arab minority.

Being in the lowest socio-economic strata, Arab sector was hit the hardest by the education budget cuts made in the 1980s and from 2001 to 2005, particularly in funding for elementary and junior high schools (Central Bureau of Statistics, 2008). There were problems concerned the quality of teach-

er staff. Arab local authorities, which had a great deal of responsibility in hiring teachers, principals and general functioning of schools, made little progress in raising the quality of public schools (Zamaret, 1998). As a result of the work of several sub-committees, which were established between the Committee of the Heads of Local Arab Councils, the FUCAE and the Ministry of Education, recommendations have been developed to improve the infrastructure and organization of learning in Arab schools (FUCAE, 2004). Significant gaps were found in the way the government allocated resources for Jewish and Arab education sectors (Dovrat, 2005). The government attempted to help the Arab sector by launching so-called “five-year plans” which passed in 1991, 1998, and 2000, but neither of these plans were fully implemented (Dovrat, 2005). It was claimed (FUCAE, 2011) that the resources invested by the government in Arab schools during a decade were insufficient for the growing education needs of Arab population.

The recent decade has seen considerable developments in the educational policies in Israel. As a result of the decentralization processes in the public school system, teachers become more involved in educational policy making than in the past. Private and public institutions, which are not subject to the authority of the Education Ministry, also contribute to the curriculum design processes. The Education Ministry set forth the goal to move a whole school educational system towards the focus on HOTS. A reform entitled “Pedagogical horizon” (2007) envisaged the adoption of a new education approach which was focused on developing the HOTS of students throughout the whole public school system and across all curriculum subjects. Changes were planned in three interrelated directions: curriculum and learning materials and standards; teacher professional development; and new assessment standards. In 2011, another reform called “Courage to change” had similar objectives, employing an incentive-based reward system for well-performing schools. It changed the structure of the teachers’ workweek, increasing the time for individual lessons and instructional support hours. However, the Education Ministry’s policies maintained since 2009 have reduced the priority given to the “Pedagogical Horizon” reform, putting an emphasis on raising test scores on national and international tests and teaching for tests and competitions (Gallagher, Hipkins & Zohar, 2012).

Over recent years, there has been a growing call from the Israeli Arab academics and public leaders to have influence over the education in the Arab sector. In 2010, the Arab Pedagogic Council was established to increase the participation of Arab educators in determining the Israeli education policies. On the wave of criticism of the new civics textbook for high schools (Ashkenazi et al., 2016) FUCAE and the Forum of Arab Civics Teachers put forward an alternative civics curriculum for Arab students. The purpose was to instill democratic, pluralistic thinking in students while emphasizing the

historical connection of Arab citizens to the land and their sense of national identity (FUCAE and the Forum of Arab Civics Teachers, 2018). The “Pedagogical Horizon” (2007) reform continues its pace towards the integration of HOTS into the school curriculum. An increase in the quality of education can be seen in some of the socio-economically weakest Arab communities (“Transforming education in the Arab sector,” 2014). It can be safely assumed that the process continues of implementing a broad academic-pedagogical change to the Israeli school system in general and to the Arab education system in particular.

Socioeconomic factors affecting the quality of Arab education

The disparities between the Jewish and Arab education sectors have been known since the first years of the establishment of the state education system (Cohen, 1951; Hussein, 1957). The outputs of the Arab education system are consistently lower than these of the Jewish system, with Bedouin students being the lowest scorers (Blass, 2017; Huleihil & Huleihil, 2016). There is a higher dropout rate among Arab students than among their Jewish counterparts (Nusair-Shalloufi, 2016). Those Arab students who continue their schooling perform worse on the matriculation (Bagrut) examinations and are less likely to meet the standards for university admittance (Belikov, 2014; Blass, 2017). Below, several factors are considered to have an influence on the academic achievements of Arab students.

Researchers (Jabareen & Agbariya, 2011; Leavy, 2010; Wolf & Breit, 2012) suggest that economic discrimination against the Arab population in Israel has an impact on the student academic performance. It was argued decades ago (Al Haj, 1995; Gaziel, 1999; Mazawi, 1999) that the resources allocated to the Arab education sector did not keep up with the growth and needs of Arab population. The Ministry of Education allocated, on average, more teachers per capita to Jewish schools than to Arab schools, so there was a shortage of teaching staff and hours (Golan-Agnon, 2006). In addition, the number of additional educational programs and support services received by the Arab sector was disproportionate to the representation of Arabs in the population (Coursen-Neff, 2005). Over recent decade, this criticism has been echoed by many scholars and media professionals (Abu-Saad, 2011; Lavie, 2016; Magadley & Amara, 2018) who hold that resources invested in primary and secondary education are insufficient for the growing education needs of the Arab community².

² The 2014 data showed that Arab high school students from a weak socioeconomic background received 42% less funding than Jewish high-schoolers from a similar background and Arab high-schoolers from more stable socioeconomic backgrounds received 27% less funding than their counterparts from the Jewish sector (Dattel, 2014). In 2015, NIS 20,000 was allocated per primary school student in the Hebrew sector, but only about NIS 16,000 - in the Arab education stream (Taub Center, 2017).

As Arab communities are among the poorest in Israel, low-income families are unable to provide the same educational opportunities for their children as families from a higher socioeconomic status. Due to religion and beliefs, the high number of family members and low income, education is not at high priority for the majority of Arab population (Dan, 2014). On average, Jewish parents spend more on education than do Israeli Arab parents, and parental participation in school costs is lower in the Arab sector (Shaked, 2017). There is also a local authority's impact on the level of education. Shapira-Lishchinsky and Ben-Amram (2017) suggest that higher students' achievements in the central districts and large cities can be explained by a greater wealth of the municipalities which can invest more in education. Compared to Jewish local authorities, Arab localities receive larger per-pupil grants for students ages 3–18 (Belikov & Agbaria, 2014). However, a huge difference in per-student expenditures persists, chiefly due to the small tax base in Arab localities and shortage of independent revenues collected by the authorities (Haidar, 2010). At the same time, the financial crisis in many local authorities in Israel, which is reflected in a low quality of social and educational services provided to the population, is often a result of poor local planning and decision-making (Zeedan, Vigoda-Gadot & Ben-Artzi, 2017). It can be concluded that Arab school students still have worse opportunities to attain education than their Jewish counterparts.

Factors impacting on the quality of teaching in Arab schools

Economic discrimination and lower income seem to be not the only factors causing the gaps between the Arab and Jewish education sectors. The results of several studies showed that when Jewish and Arab students of the same socioeconomic level are compared, the former perform better on the matriculation and national examinations and drop out at lower rates (Blass, 2017; Huleihil & Huleihil, 2016; Swirsky, 1990; 2000). Researchers (Abu-Asbah, 2012; Abu-Hussain & Abu-Hussain, 2018) suggest the influence of cultural aspects on the quality of Arab education in Israel. In what follows, teacher and student performance are characterized in the context of socio-cultural traditions of the Israeli Arab society. It is shown then how the HOTS-based education strategies are breaking through the traditional models of schooling.

It is claimed (Abu-Asbah, 2012; Khalid, 2017) that the Arab society in Israel is still more patriarchal and conservative than the Jewish one, with the social patterns based on traditional authority and hierarchy. The role of traditional Arab values in school education, teacher's status in the Arab society, and the influence of political and socioeconomic factors were first comprehensively studied in the publications by Mar'i (1975; 1978; 1981) and discussed by other authors (Al-Haj, 1996; Bashi, Khan & Davis, 1981). Due

to a severe shortage of qualified teachers in Arab schools, many uncertified teachers (including high school graduates) were employed in primary and second level schools (Abu-Asbah, 2012; Arar, 2012; Mar'i, 1978). This problem became a fundamental impediment to the provision of quality education to Arab children and youth (Al Haj, 1995).

With the growth in the number of Arab school graduates completing higher education, the situation has changed significantly (Agbaria, 2010). The study conducted by Alayan, Raid and Toran (2007) among Arab pre-service teachers reflected this change, emphasizing that the main factors influencing motivations for becoming a teacher were the desire of intellectual growth, development of creativity in thinking, moral satisfaction from working with children, and considering teachers inspirational leaders for their society. Yet a massive inflow of Arab school graduates into teaching profession resulted in the surplus of teachers in the Arab sector. The recent data show that the Education Ministry can employ only 30 percent of graduates seeking teacher jobs (Grave-Lazi, 2016). Many Arab teachers either wait to be offered a position or they work part-time, without proper benefits or job security (Skop, 2013; 2016; Zur, 2017). While the number of Arab teachers has increased, the problem of the low quality of teaching in Arab schools remains acute (Abu-Hussain & Abu-Hussain, 2018; Amer & Jaber, 2012; Zoubi & Natur, 2013).

Several reasons can be given to account for this problem. Researchers (Agbaria, 2010; Berger, 2014) hold that the Israeli education system is still very centralized. This impedes significant changes towards greater independence for schools and teacher involvement in implementing the reforms, particularly in addressing the needs of Palestinian Arab population (Agbaria, 2010; Arar & Masre-Harzalla, 2016). For centuries, there has been a top-down, authoritarian mode of teaching in Arab schools (Hussain & Abu-Hussain, 2018; Mahamid, 2012; Mar'i, 1978; 1985; Ramahi, 2015). In Arab schools, relations between teachers and students are more formal than in Jewish schools and many Arab teachers support the use of punitive discipline methods to correct student misbehaviour (Khoury-Kassabri & Ben-Harush, 2012). Teachers often use poor, inaccurate and ambiguous language in the classroom (Abu-Husein, 2015). Another study conducted among Arab teachers revealed that the thinking styles, which are considered to be associated with innovative teaching and evaluation methods, were least prevalent among the study participants (Abu-Hussain & Abu-Hussain, 2018). The factor, which still has an impact on the appointment of principals and teachers in Arab localities is their connection to clans (hamulas), which complicates any change in their work status (Iram & Shemida, 1998; Rabia, 2013).

In the first decade of this century, efforts were made to implement the HOTS-based pedagogy in the Arab education system. Innovative teacher

training programs were launched to promote HOTS in pre-service teachers by adopting the Professional Development Schools (PDSs) reform that is intended to enhance partnership between teacher training colleges/universities and schools (Amer & Abu-Jaber, 2012). On this basis, the Partner Developmental Schools program was developed to meet the needs and raise the professional level of Bedouin elementary school teachers (Zamir & Abu G'aber, 2015). Various ways of integrating ICT into teaching of mathematics were presented by Baya'a and Daher (2013). Daher and Baya'a, (2015) designed models for the development of HOTS in mathematics classrooms by using the GeoGebra application. An innovative training program for female Arab students was implemented to deepen the knowledge about the professional development of female Arab students in Israel (Masre & Haj Yahia, 2013). It should be noticed in this regard that "feminization" of teaching profession in the Arab sector is considered a significant change in the traditional attitudes and concepts of Arab society and a sign of the modernization thereof (Alayan et al., 2007; Mar'i, 1978). However, problems arise in the implementation of innovative learning programs, such as teachers' massive workload and shortage of professional teacher educators (Reichman & Artzi, 2012).

An impact of teaching methods on student performance in Arab public schools

It has been mentioned earlier that the results of studies and exam performance, including matriculation exams, show that Arab students still fall behind in all areas requiring HOTS, as a result of the low quality education in the majority of Arab schools (Leavy, 2010; Ramahi, 2015). It was mentioned earlier that on the basis of the inquiry-based American BSCS curriculum, learning by inquiry in science disciplines was introduced in Israeli schools in the mid-1960s. However, the study by Watted, Bamberger and Tal (2013) shows that inquiry-based laboratory activities are not commonly integrated into Israeli schools in general and into Arab schools in particular. Studies related to the development of students' HOTS in chemistry and biology laboratories (Abed, 2008; Dkeidek, Mamlok-Naaman & Hofstein, 2010) reported that compared to the Jewish student participants who tended to work in an independent manner, students from Arab schools were mostly dependent on their teacher participants. Dkeidek et al. (2010) explain that according to deep-rooted traditions of Jewish education, asking teacher questions is an important form of learning and teacher-student interaction while according to Arab education traditions, it is the teacher who asks questions and the students who answer.

Other research (Abed & Dori, 2013; Abu-Asbah, 2012) supports the idea that the development of HOTS, particularly inquiry skills, are not typical

of the Arab education culture. The results of the recently conducted studies (Abu-Hussain & Abu-Hussain, 2018; Mahamid, 2012) show that students educated by using traditional teaching styles are not encouraged to ask questions intended to develop deep and creative thinking. Students experienced difficulties in problem-solving, particularly because of the language used in the problem text and failure to understand the nature of complex problems and think strategically when solving a problem (Seif, 2017). Alayan (2012) suggests that high academic achievements should not be credited to traditional teaching methods, but rather to students' individual abilities and supportive social and family environment. The results of this study conducted among former Arab public school students reported, however, that many of the participants were able to properly evaluate their teachers' methods, voicing criticism against top-down, authoritarian teaching.

The recent data suggest that well-thought-out intervention programs and assessment tools can assist in developing students' HOTS. The results of the study by Amir and Obaid (2013) show a correlation between the teaching strategies developed within the PDSs education project and Arab students' HOTS. The authors suggest an increase in the HOTS of study's participants and in their achievements in tests and examinations. There was a significant increase in the problem solving skills among the 6th grade study's participants, as a result of implementing the CoRT (Cognitive Research Trust) programme for developing mathematical creativity (Daher et al., 2017). The results of the HOTS intervention program based on the "Pedagogical Horizon" (2007) strategies suggest an improvement in students' perceptions of their cognitive and dispositional skills (Seif, 2017). An innovative approach was developed to provide a complex dynamic evaluation of the thinking development of individual students in a Problem-Based Collaborative Learning (PBCL) environment (Seif & Tilchin, 2013).

Problems associated with the development of students' HOTS through social sciences and humanities

Teaching civics and humanities to Arab students in Israeli schools has been a subject of research interest over recent decades, and a source of criticism against the civics and humanities curricula developed for schools. It has been argued (Al-Haj, 2005; Peled-Elhanan, 2012) that Arab students are required to spend many class by studying Jewish history, culture and language while much less curriculum time is dedicated to Arabic history and literature. Many of the scholars (Arar & Ibrahim, 2016; Jabareen, 2006; Mustafa, 2014) hold that the Arab school system is oriented at the Zionist national project, interpreting the historical and cultural heritage of Israel's society only in terms of Jewish values. Mahamid (2017) concurs, pointing out that history textbooks for Arab school students ignore the history and

culture of the Palestinian Arab people, as main issues related to the history of the Arab minority in Israel were not included in the history curriculum of 2007. Learning program in geography emphasizes the Hebrew names given to different locations, thus denying historical ties of Palestinian Arabs to the land (Falah, 1996; Khamaise, 2014).

Over decades, the issues of political and socio-cultural discrimination have been explored in academic papers, various committees' reports and mostly left-wing media, but very rarely they become the topics of discussion in the history and civics classrooms. Arab teachers' unwillingness to discuss these issues with students is rooted in the times of military administration (1948-1966) when administrative and teaching staff in Arab schools could not be appointed without the approval of the General Security Services (Shin Bet) and was actually forbidden from engaging in any political activities (Abu-Saad, 2006; Al-Haj, 1996; Arar, 2012). Those who did not comply with these requirements were promptly fired from their jobs. Obviously, such conditions were hardly appropriate for maintaining open and free discourse in the classroom and fostering the culture of critical and independent thinking among the school staff and students. Although, since the late 1980s, the Ministry of Education allowed Arab teachers to discuss current issues in the classroom, teachers generally feared Shin Bet and as a result, they avoided sharing their perceptions on the current socio-political problems (Jabareen, 2003). Recent studies (Magadley & Amara, 2018; Seif, 2017) suggest that Arab schools still have little freedom in promoting the issues of cultural-national identity of Palestinian Arabs and discussing sensitive political topics in the classroom.

Notwithstanding the argument that the development of students' thinking strategies is critical for educating future citizens (Barak, 2005; Zohar, 2010), the examination of the research on development of students' HOTS in Israeli schools reveals that it mostly concerns enhancing students' thinking skills in mathematics, natural sciences and ICT (Seif, 2017). There are very few authors who pay attention to the issue of HOTS in history and civics. Since the 1980s, the Ministry of Education has made some positive reforms in history, geography, and civics curricula for Arab schools, but many of these changes have not been fully implemented due to a shortage of teaching materials and classroom hours (Coursen-Neff, 2005). Leavy (2010) emphasizes that the reforms in civics education and coexistence education programs were not legislated into law and, therefore, the Ministry of Education could not enforce their implementation. Furthermore, the civics curricula for the 2011 and 2016 school years decrease the significance of teaching civics, showing a preference for reinforcing Jewish and Zionist values over teaching on universal democratic values, Jewish-Arab coexistence, and Palestinian Arab heritage (Kashti, 2011; Radai, 2018).

The way, in which the Arab language and literature curriculum are studied in Arab schools, may serve another proof of how the Palestinian Arab heritage and culture are marginalized. In Jewish schools, studying Jewish is part of exploring national culture and forging national identity. This is not the case in Arab schools where Arabic is taught superficially, in order to meet the needs of everyday life (Jabar, 2014). The Palestinian Arab literature classics studied throughout the Arab world are only slightly introduced in Israeli Arab high schools. It has been pointed out that Arab school students fail to reach a satisfactory level of achievement in their mother tongue (Amara, 2001; Jabareen, 2005). Shohamy (2006) argues that Arab students have strong motivation to study Hebrew as a tool for achieving higher education and employment opportunities while perceiving Arabic as the language of lower status. It is suggested, however, in a recently issued Teachers' Handbook (Ministry of Education, 2017, p.4) that literature allows for making comparison within and between literary texts, which stimulates "expression of opinions as well as relating to other forms of thinking skills". Yet, the low proficiency of Arab students in Arabic language and literature suggests that these are hardly used to nurture students' HOTS.

Discussion

The current review attempts to identify the socio-economic and political factors that are considered significant in establishing the culture of higher order thinking in the Arab public schools in Israel. The majority of authors (Abu-Asbah, 2012; Arar, 2012; Leavy, 2010) associate the developments in the Arab education sector with the major political and ideological transformations in the country. This view seems to be relevant to the history of the Arab education in Israel, yet another perspective may provide additional insight.

Undoubtedly, the Israeli government education policies have contributed significantly to the development the Arab education system. Along with this, the efforts of Arab educators and public organizations, which have been directed against political and economic discrimination, represent internal forces coming from inside the Israeli Arab society for the purpose of the improvement of Arab education. Another important internal factor is the criticism voiced by Arab educators regarding the Arab school system (Abu-Husein, 2015; Alayan, 2012) as part of patriarchal Arab society. According to the principles laid in the theoretical framework of this paper, an inward-looking critical analysis of culture provides a powerful stimulus to development. It is suggested (Lamm, 2000) that those who are incapable to develop a critical attitude towards their own culture will be not able of developing a tolerant attitude towards the culture of other ethnic groups.

Critical approach to the Arab education culture and the identification of factors that impede its development have become sound since the 1970s, with the publication of the works by Mari (1975; 1978). Since then, the amount of research on Arab education has significantly increased, but the instruction and learning practices in Arab public schools are changing very slowly.

On the one hand, it is argued (Blass, 2017) that the situation in the Arab education system is improving in terms of the inputs channeled to it and the outputs received. As a result of the government's efforts, the overall educational level of the Arab population in Israel has risen significantly since the establishment of the state. But there is still much criticism about the design and implementation of the Education Ministry's policies, on the other hand (Jabareen & Agbariya, 2011; Staff, 2016). While it is claimed (Blass, 2017; Lavie, 2016) that the gaps between Hebrew and Arab students have declined over time, they still exist at all levels and in all areas of education. The implementation of the "Pedagogical horizon" (2007) reform is challenged by a number of factors, including the "teaching for the test" tendency, which has become sound since 2009, lack of appropriately trained teacher personnel, and teacher work overload (Galagher et al., 2012). There is a number of problems in the education of Arab teachers in terms of meeting the demands of the contemporary school and addressing the needs of the Arab minority in Israel (Agbaria, 2010) Problems have been also identified in the performance of local authorities, many of which fail to bring schools to the required standards.

As a result of a number of factors, classroom practices in Arab public schools are still oriented towards traditional teaching. Needless to say that outdated methods of teaching and learning impede the intellectual and personal growth of Arab students, put school graduates at disadvantage in acquiring higher education, and reduce their job prospects. In addition, authoritarian pedagogy and the clan affiliation factor collide with the role of the teacher as an agent of social change (Iram & Shemida, 1998; Mar'i, 1978). Although some changes were made to the civics and humanities curricula taught in Arab schools, Arab teachers still have little freedom in developing the thinking skills of students by discussing current political issues in the classroom and promoting the historical and cultural heritage of Palestinian Arab population. In addition, Arabic language and literature are insufficiently used to promote national cultural heritage among Arab students and develop students' HOTS.

Conclusion

It has been commonly agreed upon that intensive processes of urbanization and modernization of the Arab society in Israel requires the development of individual initiative, personal responsibility, and thinking abilities required

to meet the social and technological challenges of the 21st century. A great deal has been achieved in the development of the Arab education system in Israel, although there is a lot of work to be done yet. In what follows, recommendations are made based on the results of the literature review.

In view of the low performance of Arab-Palestinian students in national and international tests, more resources should be allocated to the Arab public education system in order to raise the level of students' academic achievement and reach complete equality between the Arab and Jewish education sectors. The disparities between sectors cannot be reduced without the intensive government involvement in the development of the Arab localities and a fair allocation of education funding. At the same time, Arab local authorities must examine their policies and practices in order to derive the fullest benefit from the allocated funds and the revenues collected from the residents.

Changes in the Arab society particularly concern the education system in which an authoritarian style of school management and top-down, non-participatory modes of teaching have been dominated for generations. There should be a broad implementation of the learning programs in Arab schools, including intervention plans that proved successful nationwide in creating the HOTS-promoting learning environment. On the part of the Ministry of Education, there must be consistency in the implementation of reforms, including a long-term commitment to the HOTS-based learning and providing Arab teachers with more freedom to address their students' needs. The development of reforms requires taking in account cultural, conceptual and organizational aspects of the environment in which the reform is carried out. Therefore, full participation of Israeli Arab education professionals and public leaders is necessary for the formulation of pedagogic and curricular policies for Arab schools.

High-quality training programmes should be implemented by the Arab teacher colleges to prepare teachers who will demonstrate excellent knowledge of the subject matter and the ability to increase students' desire to study the subject. A system of incentives has to be developed for the teacher training institutions in order to encourage developing innovative learning programs and involve students in the areas where there is a shortage of qualified teachers. On the part of the government, efforts are necessary to improve the work conditions of the public school teachers whose wages are low compared to other industrialized countries.

An implementation of the education strategies in a multicultural society requires a change in the Education Ministry's policies that concern teaching the Israeli-Arab history, culture and identity and the nature of Israeli-Palestinian conflict. One of the main conditions for ensuring the equality between the Arab and Jewish education sectors is that both Arab and Jewish students should acquire a true knowledge of their history and cultural values.

These have to be discussed in the classroom in order to develop a tolerant attitude towards the culture of others and educate empowered and competent citizens. Arabic language and literature needs to become the measure of exploring national culture and shaping national identity and of fostering Arab students' HOTS. By teaching foreign language as a second language, teachers have to help students obtain a global awareness and understanding of other cultures, and develop their thinking skills as well. To conclude, the measures recommended above concern the aim of helping Arab students become efficient learners and thoughtful citizens who are able to cope with contemporary problems.

References

- Abed, A. (2008). Bilingual learning culture in computerized chemistry learning environment (Unpublished doctoral dissertation). Haifa: Technion, Department of Education.
- Abir, A. & Dori, Y. J. (2013). Inquiry, chemistry understanding levels, and bilingual learning. *Educación Química*, 24 (1), 37-43. doi: 10.1016/S0187-893X (13)73193-8
- Abu-Asbah, K. (2012). The Arab education in Israel: Dilemmas of a national minority. Jerusalem: The Floersheimer Institute for Policy Studies.
- Abu-Hussein, J. (2015). The thinking language of elementary school teachers in the Arab education system in Israel: Implications for teacher education. *Open Journal of Business and Management*, 3, 257-264. doi: 10.4236/ojbm.2015.33026
- Abu-Hussain, J. & Abu-Hussain, N. (2018). Thinking styles among the Arab-minority teachers in the Arab education system in Israel. *American Journal of Educational Research*, 6 (1), 32-37. doi: 10.12691/education-6-1-5
- Abu-Saad, I. (2006). State educational policy and curriculum: The case of Palestinian Arabs in Israel. *International Education Journal*, 7 (5), 709-720.
- Abu-Saad, I. (2008). Present absent: The Arab school curriculum in Israel as a tool for de-educating indigenous Palestinians. *Holy Land Studies*, 7 (1), 17-43. doi: 10.1353/hls.0.0002
- Abu-Saad, I. (2011). Arab Education in Israel and the policy of control: The case of education in the Negev. Beer-Sheva: Ben-Gurion University of the Negev Press.
- Agbaria, A. K. (2010). Arab teacher training in Israel: Overview and policy recommendations. Nazareth: Dirasat & FUCAE.
- Alayan, S. (2012). Arab education in Israel: Lessons from positive learning experiences of Palestinian-Israelis. *Diaspora, Indigenous, and Minority Education. Studies of Migration, Integration, Equity, and Cultural Survival*, 6 (4), 214-229. doi: 10.1080/15595692.2012.715104
- Alayan, S., Raid, Z. & Toran, Z. (2007). Motivational factors for joining teaching profession among pre-service teachers in the Arab sector. *Dapim*, 44, 123-147. [Hebrew].
- Al-Haj, M. (1995). Education, empowerment, and control: The case of the Arabs in Israel. New York, NY: SUNY Press.
- Al-Haj, M. (1996). Arab education in Israel: Control and empowerment. Jerusalem: Magness Press.
- Al-Haj, M. (2005). National ethos, multicultural education, and the new history textbooks in Israel. *Curriculum Inquiry*, 35 (1), 47-71. doi: 10.1111/j.1467873X.2005.00315.x

- Amara, M. (2001). Arab language education in the Hebrew state. In R. L. Cooper, E. Shohamy & J. Walters (Eds.), *New perspectives and issues in educational language policy* (pp. 155-170). Amsterdam-Philadelphia: John Benjamins.
- Amer, A. (2011). Infusing higher order thinking skills (HOTS) into literature instructional practices – high school Arab teachers' perceptions & reform dynamics in Israel. In L. Gómez Chova, I. Candel Torres & A. López Martínez (Eds.), *EDULEARN12: Proceedings of the 4th International Conference on Education and New Learning* (53-84). Barcelona: IATED.
- Amer, A. & Abu-Jaber, S. (2012). Professional development schools (PDSS) as a teacher training reform in two Arab teacher training colleges in Israel. Baq'a-el-Garbiya: The Al-Qasemi Academic College of Education.
- Amir, A. & Obaid, D. (2013). The Role of PDS in developing Arab students' critical thinking: The correlation between PDS and Arab students' critical thinking ability. In N. Adin (Ed.), *Changing reality through education: Proceedings of the 6th International Conference on Teacher Education* (p. 27). Jerusalem-Tel Aviv: Tal Printing.
- Arar, K. (2012). Israeli education policy since 1948 and the state of Arab education in Israel. *Italian Journal of Sociology of Education*, 4 (1), 113-145. doi: 10.14658/pupj-ijse-2012-1-6
- Arar, K. & Masre-Harzalla, A. (2016). *Motivation among the Arab teachers in Israel*. Jerusalem: Van Leer Institute.
- Ashkenazi, V., Alperson, B., Tamir, D. & Shtarkman, D. (Eds.). (2016). *To be citizens in Israel - a Jewish and democratic state*. Jerusalem: The Government Print House.
- Barak, M. (2005). Civic education in Israel. *Adalah's Newsletter*, 18 (1-25).
- Bashi, Y., Khan, S. & Davis, D. (1981). *Educational achievements of primary schools in the Arab education system*. Jerusalem: School of Education, Hebrew University of Jerusalem.
- Baya'a, N. & Daher, W. (2013). Pedagogic training as a catalyst for teachers' integration of ICT. In N. Adin (Ed.), *Changing reality through education: Proceedings of the 6th International Conference on Teacher Education* (p. 288). Jerusalem-Tel Aviv: Tal Printing.
- Bekerman, Z. (2004). Multicultural approaches and options in conflict ridden areas: Bilingual Palestinian-Jewish education in Israel. *Teachers College Record*, 106 (3), 574-610.
- Belikov, M. (2014). *Disparities between Jews and Arabs in the education system: Physical infrastructure*. Jerusalem-Haifa: Sikkuy.
- Belikov, M. & Agbaria, S. (2014). *From deficits and dependence to balanced budgets and independence. The Arab local authorities' revenue sources*. Jerusalem-Haifa-Nazareth: Sikkuy. [Hebrew].
- Berger, Z. (2014). Negotiating between equality and choice - A dilemma of Israeli educational policy in historical context. *Italian Journal of Sociology of Education*, 6 (2), 88-114.
- Blass, N. (2017). *The Academic achievements of Arab Israeli pupils*. Jerusalem: Taub Center for Social Policy Studies in Israel.
- Blum, L. (2014). Three educational values for a multicultural society: Difference recognition, national cohesion and equality. *Journal of Moral Education* 43 (3), 332-344. doi: 10.1080/03057240.2014.922057
- Central Bureau of Statistics (2008). *National expenditure on education 1962-2006*. Jerusalem: Central Bureau of Statistics.
- Cohen, A. 1951. Problems of education for Arab children in Israel. *Megamot*, 2 (2), 126-137.

- Coursen-Neff, Z. (2005). Discrimination against Palestinian Arab children in the Israeli Educational System. Retrieved March 4, 2018, from <https://www.hrw.org/reports/2001/israel2/JILPfinal.pdf>
- Daher W. & Baya'a, N. (2015). Integrating HOTS activities with GeoGebra in pre-service teachers' preparation. *International Journal of Educational and Pedagogical Sciences*, 9 (7), 2441-2444. doi: 10.5281/zenodo.1108022
- Daher, W., Tabaja-Kidan, A. & Gierdien, F. (2017). Educating grade 6 students for higher-order thinking and its influence on creativity. *Pythagoras - Journal of the Association for Mathematics Education of South Africa*, 38 (1), 1-12. doi: 10.4102/pythagoras.v38i1.350
- Dam, G. & Volman, M. (2004). Critical thinking as a citizenship competence: Teaching strategies. *Learning and Instruction*, 14 (4), 359-379. doi: 10.1016/j.learninstruc.2004.01.005
- Dan, B. D. (2014). A picture of the nation Israel's society and economy in figures 2014. Jerusalem: Taub Center for Social Policy Studies in Israel Jerusalem.
- Dattel, L. (2014). Israel's religious Jews get more school funds than other sectors, Ministry confirms. Retrieved February 3, 2018, from <https://www.haaretz.com/israel-news/business/premium-religious-jews-get-more-schools-funds-than-others-1.5342356>
- Dkeidek, I., Mamlok-Naaman, R. & Hofstein, A. (2010). Effect of culture on high school students' question-asking ability resulting from an inquiry-oriented chemistry laboratory. *International Journal of Science and Mathematics Education*, 9 (6), 1305-1331.
- Dovrat, S. (2005). The national program for education: a report of the national task- force for advancement of education in Israel. Retrieved February 14, 2018, from https://www.knesset.gov.il/docs/eng/dovrat_report_eng.doc
- Eden, H., Ashkenazi, V. & Alperson, B. (Eds.). (2001). To be citizens in Israel - a Jewish and democratic state. Tel-Aviv: Maalot.
- Falah, G. (1996). The 1948 Israeli-Palestinian war and its aftermath: The transformation and de-signification of Palestine's cultural landscape. *Annals of the Association of American Geographers*, 86 (2), 256-285. doi: 10.1111/j.1467-8306.1996.tb01753.x
- Facione, P. A. (1990). Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction. Millbrae, CA: The California Academic Press.
- Follow-Up Committee on Arab Education in Israel (1997). The goals of Arab education in Israel. Nazareth: Author. [Arabic].
- Follow-up Committee on Arab Education (2004). Statement paper, reactions and remarks to the Dovrat Committee. Nazereth: Sub-Committee Headed on the Matter of Arab Education.
- Follow-Up committee on Arab education in Israel (2011). Document: key issues, needs and disadvantages in the Arab education system. Retrieved March 13, 2018, from <http://arab-education.org/?p=828>
- Follow-Up Committee and the Forum of Arab Civics Teachers (2018). Kurasat madaniyyat sayf (The civics booklet for summer). Retrieved March 13, 2018, from <http://almotabaa.com/> [Arabic].
- Gallagher, C., Hipkins, R. & Zohar, A. (2012). Positioning thinking within national curriculum and assessment systems: Perspectives from Israel, New Zealand and Northern Ireland. *Thinking Skills and Creativity*, 7 (2), 134-143. doi:10.1016/j.tsc.2012.04.005
- Gaziel, H. (1999). Education policy in Israel: Structures and processes. In E. Peled (Ed.), Jubilee for the education system in Israel (pp. 67-84). Tel Aviv: Ministry of Security. [Hebrew].

- Grant, M. J. & Booth, A. (2009). A typology of reviews: an analysis of 14 review types and associated methodologies. *Health Information and Libraries Journal*, 26 (2), 91-98. doi: 10.1111/j.1471-1842.2009.00848.x
- Golan-Agnon, D. (2006). Separate but not equal: Discrimination against Palestinian Arab students in Israel. *American Behavioral Scientist*, 49 (8), 1075-1084. doi: 10.1177/0002764205284719
- Grave-Lazi, L. (2016). Only 30% of Arab teachers able to find work, Education Ministry tells Knesset Panel. Retrieved February 12, 2018, from <https://www.jpost.com/Israel-News/Only-30-percent-of-Arab-teachers-able-to-find-work-Education-Ministry-tells-Knesset-panel-442183>
- Haidar, A. (2010). The collapse of Arab local authorities: Suggestions for restriction. Jerusalem: The Van Leer Institute. [Hebrew].
- Harari, H. (1992). Report of the Supreme Committee for Education in Technological Sciences. Jerusalem: Ministry of Education and Culture. [Hebrew].
- Huleihil, M. & Huleihil, H. (2016). Status of science and technology education. *Athens Journal of Education*, 3 (4), 365-385.
- Hussein, R. (1957). The Arab School in Israel. *New Outlook*, 5, 44-48.
- Iram, Y. (2014). Israel: socio-historical context and socio-historical issues. In N. Ivanenko (Ed.), *Education in Eastern Europe and Eurasia* (pp. 303-316). London - New-York: A&C Black.
- Iram, Y. & Shemida, M. (1998). *The educational system of Israel*. Westport, CT: Greenwood Press.
- Jabar, K. (2014). The Learning program in Arabic literature for Arab schools in Israel: From the demands of reality to a demanded reality. In M. Meiri (Ed.), *The learning program for Arab education in Israel: Critical research on the learning program for Arabic language, history, geography and civil studies* (pp. 122-173). Nazereth: The Pedagogic Council of the Follow-up Committee on Arab Education. [Arabic].
- Jabareen, A. (2005). Language policy and the status of Arabic in Israel. Retrieved January 26, 2018, from <http://www.qsm.ac.il/mrakez/asdarat/jamiea/9/3--Ali%20Jabareen.pdf>
- Jabareen, Y. T. (2006). Critical perspectives on Arab Palestinian education in Israel. *American Behavioral Scientist*, 49 (8), 1052-1074. doi: 10.1177/0002764205284718
- Jabareen, J. & Agbariya, A. (2011). Education on hold: Israeli government policy and civil society initiatives to improve Arab education in Israel. Haifa: Dirasat.
- Kashti, O. (2011). Israel's plan for next year's school curriculum: Reinforcing Jewish and Zionist values. Retrieved February 13, 2018, from <https://www.haaretz.com/1.4999573>
- Khamaise, R. (2014). The learning program in geography: Geography between denial and adaptation. In M. Meiri (Ed.), *The learning program for Arab education in Israel: Critical research on the learning program for Arabic language, history, geography and civil studies* (pp. 152-222). Nazereth: The Pedagogic Council of the Follow-up Committee on Arab Education. [Arabic].
- Khalid, H. (2017). Violence in the family within the Arab society in Israel and coping with welfare authorities. *International Journal of Humanities and Social Science Invention*, 6 (1), 2319-7714.
- Khoury-Kassabri, M. & Ben-Harush, A. (2012). Discipline methods within the Israeli education system: Arab and Jewish teachers' attitudes. *The International Journal of Children's Rights*, 20 (2), 265-278. doi: 10.1163/157181811X573084
- Lavie, E. (2016). Integrating the Arab-Palestinian minority in Israeli society: Time for a strategic change. Petah Tikva: Elinir.

- Lamm, Z. (2000). Multicultural, intercultural education, Is it for real? In M. Bar Lev (Ed.), Teaching culture in a multicultural society. Issues in teacher continuing education. Collection 9 (116-127). Jerusalem: Hebrew University, School of Education, and Ministry of Education and Culture.
- Leavy, A. F. (2010). The failure of education policy in Israel: Politics vs. bureaucracy. *CUREJ: College Undergraduate Research Electronic Journal*. Retrieved February 14, 2018, from <https://repository.upenn.edu/curej/115/>
- Mahamid, A. P. (2012). Is traditional Arab society sufficiently prepared to cope with the success of the postmodern era? *Studies in Education, Society, Technology and Information, ORT Israel*, 13, 35-41. [Hebrew].
- Mahamid, H. (2017). History education for Arab Palestinian schools in Israel. *Journal of Education and Development*, 1 (1), 37-47. doi: 10.20849/jed.v1i1.249
- Magadley, W. & Amara, M. (2018). Alternative education in the Arab-Palestinian society in Israel: a Panacea? *Al-Qasemi Journal of Islamic Studies*, 3 (1), 95-118.
- Mar'i, S. (1985). The future of the Palestinian Arab education in Israel'. *Journal of Palestine Studies*, 14 (2), 52-73. doi: 10.2307/2537161
- Mar'i, S. (1981). The creative thinking of the Arab children in Israel and the West Bank. *Studies in Education*, 28, 80-115. [Hebrew].
- Mar'i, S. (1978). Arab education in Israel. Syracuse, NY: Syracuse University Press.
- Mar'i, S. (1975). School and the Arab village society in Israel. *Studies in Education*, 2, 85-104. [Hebrew].
- Masre, S. & Haj-Yahia, N. (2013). The uniqueness of female Arab students' professional development in Israel. In N. Adin (Ed.), Changing reality through education: Proceedings of the 6th International Conference on Teacher Education (p. 78). Jerusalem-Tel Aviv: Tal Printing.
- Mazawi, A. E. (1999). Concentrated disadvantage and access to educational credentials in Arab and Jewish localities in Israel. *British Educational Research Journal*, 25 (3), 355-370. doi: 10.1080/0141192990250306
- Ministry of Education (2017). Integrating higher-order thinking skills (HOTS) with the teaching of literature. Teachers' Handbook. The Ministry of Education, Pedagogical Secretariat-Language Department. Retrieved March 14, 2018, from http://meyda.education.gov.il/files/Mazkirut_Pedagogit/English/LitHandbookReqNov17.pdf
- Ministry of Education and Culture (1996). Being citizens: Civic studies for all Israeli students. Kremnitzer Committee report. Jerusalem: Ministry of Education and Culture.
- Mustafa, M. (2014). The civics learning program in Arab high schools. In M. Meiri (Ed.), The learning program for Arab education in Israel: Critical research on the learning program for Arabic language, history, geography and civil studies (pp. 152-222). Nazereth: The Pedagogic Council of the Follow-up Committee on Arab Education.
- Nusair-Shalloufi, A. (2016). Psychosocial factors predicting hidden school dropout among Arab students in Israel (Unpublished doctoral dissertation). Ramat-Gan: Bar-Ilan University.
- Paul, R. & Elder, L. (2006). Critical thinking: Tools for taking charge of your learning and your life. Upper Saddle River, NJ: Prentice Hall.
- Peled-Elhanan, N. (2012). Palestine in Israeli school books: Ideology and propaganda in education. London: I. B. Tauris.
- Perkins, D. (1992). Smart schools. Better thinking and learning/or every child. New York, NY. The Free Press.

- Rabia, H. (2013). The power of hamula (family) in Arab villages: Is there a hamula-based preference when appointing principals? In N. Adin (Ed.), *Changing reality through education: Proceedings of the 6th International Conference on Teacher Education* (p. 264). Jerusalem-Tel Aviv: Tal Printing.
- Raid, I. (2018). Al-Madaniyyat: A new civil agenda for Arabs in Israel? In I. Radai & A. Rudnitzky (Eds.), *Bayan: the Arabs in Israel*, 13 (3-6). Tel Aviv: The Konrad Adenauer Program for Jewish-Arab Cooperation.
- Ramahi, H. (2015). Education in Palestine: Current challenges and emancipatory alternatives. The Rosa Luxemburg Stiftung-Regional Office Palestine (RLS). Retrieved February 14, 2018, from <http://www.rosaluxemburg.ps/wp-content/uploads/2015/11/RLS-Study-29.11.15-final.pdf>
- Reichman, R. G. & Artzi, S. (2012). "The road not taken" – Israeli teachers' reactions to top-down educational reform. *The Qualitative Report*, 17 (33), 1-29. Retrieved April 17, 2018, from <https://nsuworks.nova.edu/tqr/vol17/iss33/2>
- Rekness, E. (2007). The evolvement of Arab-Palestinian national minority in Israel. *Israel Studies*, 12 (3), 3-28.
- Resnick, L. B. (1987). *Education and learning to think*. Washington, DC: National Academy Press.
- Salama, G. (1999). *A new history of the Middle East*. Jerusalem: New Arab Publisher.
- Seif, A. (2017). Developing higher order thinking skills of Arab high school students in Israel. A thesis submitted to the University of Derby. Retrieved May 2, 2018, from <http://derby.openrepository.com/derby/handle/10545/621587>
- Seif, A. & Tilchin, O. (2013). Thinking development through problem-based collaborative learning. The 6th International Conference on Teacher Education. In N. Adin (Ed.), *Changing reality through education: Proceedings of the 6th International Conference on Teacher Education* (p. 126). Jerusalem-Tel Aviv: Tal Printing.
- Shapira-Lishchinsky, O. & Ben-Amram, M. (2017). Exploring the social ecological model based on national student achievements: extracting educational leaders' role. *International Journal of Leadership in Education Theory and Practice*, 21 (3), 380-398. doi: 10.1080/13603124.2017.1318956
- Shohamy, E. (2006). Language rights in the multilingual society in Israel. In D. Diskin, H. Ravid & B. Shyldkrot (Eds.), *Perspectives on language and language development: Essays in honor of Ruth A. Berman* (pp. 87-101). Tel Aviv: Tel Aviv University.
- Skop, Y. (2018). Israel needs to learn how to help Arab teachers. Retrieved May 22, 2018, from <https://www.haaretz.com/israel-news/.premium-israel-needs-to-learn-how-to-help-arab-teachers-1.5407711>
- Skop, Y. (2013). Few math degrees + little teacher training = bad Israeli math teachers. Retrieved May 2, 2018, from <https://www.haaretz.com/.premium-israel-s-math-problem-1.5268120>
- Smith, J. & Firth, J. (2011). Qualitative data analysis: application of the framework approach. *Nurse Researcher*, 18 (2), 52-62. doi: 10.7748/nr2011.01.18.2.52.c8284
- Spolsky, B. (1997). Multilingualism in Israel. *Annual Review of Applied Linguistics*, 17, 138- 150. doi: 10.1017/S0267190500003317
- Staff, T. (2016) Study: Israel has greatest educational gaps in OECD. Retrieved May 2, 2018, from <https://www.timesofisrael.com/study-israel-has-greatest-educational-gaps-in-oecd/>
- Swirski, S. (1990). *Education in Israel: Schooling for inequality*. Tel Aviv: Brirot.
- Swirski, S. (2000). *Students passing matriculation exams in 1999*. Tel Aviv: Adva Center.

- Taub Center. (2017). The Arab education system in Israel: Are the gaps closing? Retrieved May 26, 2018, from <http://taubcenter.org.il/the-arab-education-system-in-israel/>
- Transforming Education in the Arab Sector. (2014). Retrieved April 28, 2018, from <https://brookdale.jdc.org.il/en/transforming-education-arab-sector/>
- Watted, A., Bamberger, Y. & Tal, T. (2013). Arab middle-school students' perceptions of inquiry-based laboratories. In N. Adin (Ed.), *Changing reality through education: Proceedings of the 6th International Conference on Teacher Education* (p. 127-128). Jerusalem-Tel Aviv: Tal Printing.
- Wolf, L. & Breit, E. (2012). *Education in Israel: The challenges ahead*. Washington DC: GISS-The Gildenhorn Institute for Israel Studies, University of Maryland.
- Yonah, Y. (2006). Common core: A prescription for social control? In D. Inbar (Ed.), *Towards an Educational Revolution?* (pp. 203-213). Jerusalem, Israel: Van Leer Institute and Hakibbutz Hameuhad.
- Zamaret, Z. (1998). Fifty Years of Education in the State of Israel. Retrieved January 13, 2018, from <http://www.israel.org/MFA/AboutIsrael/IsraelAt50/Pages/Fifty%20Years%20of%20Education%20in%20the%20State%20of%20Israel.aspx>
- Zamir, J. & Abu-G'aber, S. (2015). Promoting social justice through a new teacher training program for the Bedouin population in the Negev: An evaluation case study. *Wiley Online Library*, 2015 (146), 71-82. doi:10.1002/ev.20121
- Zeedan, R., Vigoda-Gadot, E. & Ben-Artzi, Y. (2017). Causes of (and solutions for?) financial crises in local governments: Insights from local Arab authorities in Israel. *Administration & Society*, 49 (7), 1065-1083. doi: 10.1177/0095399714556501
- Zohar, A. (2008). Teaching thinking on a national scale: Israel's pedagogical horizons'. *Thinking Skills and Creativity*, 3 (1), 77-81. doi: 10.1016/j.tsc.2008.03.002
- Zohar, A. (2010). A Tale of two planets? Policy-making and actual classrooms: The case of teaching to think in civics education. Retrieved March 3, 2018, from <https://www.sss.ias.edu/files/papers/paper40.pdf>
- Zoubi, B. & Natur, N. (2013). Quality of teaching among Arab teachers from their perspective using the RAMA teacher evaluation instrument. In N. Adin (Ed.), *Changing reality through education: Proceedings of the 6th International Conference on Teacher Education* (p. 124). Jerusalem-Tel Aviv: Tal Printing.
- Zur, Y. (2017). 11,000 Arab teachers in Israel unemployed while Jewish schools face teacher shortage. Retrieved April 28, 2018, from <https://www.haaretz.com/israel-news/11k-arab-teachers-unemployed-as-jewish-schools-face-teacher-shortage-1.5628951>