

# GIFTED EDUCATION IN THE MIDDLE EAST

*Hanna David*

This chapter addresses the status of gifted education in several Middle Eastern countries. It includes a brief history and description of the main studies that informed the development of subsequent gifted education in the Arab countries, which constitute the majority of countries in the Middle East. I describe the institutional, public, and private support for gifted students in six Middle Eastern countries, and explain why I choose to focus on these countries and not some of the other countries in this region. The chapter concludes with a list of tests in use for identifying giftedness in the relevant languages: Arabic and Hebrew (See Appendix 8.1).

## BRIEF HISTORY OF EDUCATION IN THE MIDDLE EAST

Formal gifted education started in the Middle East in 1973 when the Israeli Ministry of Education opened the first two classes for gifted students, operating 6 days a week: a Grade 3 class in Tel Aviv and a Grade 4 class in Haifa, as well as the first enrichment program in Jerusalem. All Arab countries started formal gifted education about 3 decades later. However, a long period of extensive preparation with multiple partners has been conducted to map the direction of gifted education policy and practice in various Middle Eastern countries.

Although gifted education started in the Arab world around 2000, the foundations had been laid in the early 1980s through three studies of giftedness conducted in the Arab world from 1982 to 2005.

The first study, “Educating the Intellectually Excellent in Arab Countries,” was conducted by the Arab League Educational, Cultural, and Scientific Organization in 1982 (David, 2014a). All Arab countries received questionnaires, of which nine returned completed forms: Tunisia, Jordan, Syria, Bahrain, Iraq, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates (UAE). Six main conclusions were summarized: (a) There is no legislation regarding education of gifted students, nor is there administration allocated to gifted students and their needs; (b) there are no programs training teachers to work with gifted students; (c) there are no special programs for nurturing gifted students; (d) there are no existing classes or planned schools for gifted students; (e) there are no academic programs aimed at nurturing the skills of gifted students; and (f) the only programs aimed at nurturing gifted students include offering financial rewards for high achievement, allowing gifted students to join educational delegations travelling abroad, and few other activities.

The second study, “Ways to Identify and Nurture Gifted Students,” was completed in 1990 by the Arab Bureau of Education for the Gulf States (ABEGS), which was founded in 1981 (David, 2014a). Originally it included the UAE, Bahrain, Kuwait, and Saudi Arabia. Currently, it includes also Iraq, Qatar, Oman, and Yemen. On the basis of this study, the ABEGS reported six findings: (a) There is no accurate system for identification of gifted children in any Arab country; (b) there are no organized methods, learning strategies, or programs for gifted

students; (c) there are no expert teachers qualified to work with gifted students; (d) There is no follow-up of gifted students after graduation; (e) there are no governmental or district bureaus or departments with experts on gifted education; and (f) interest in gifted students is limited to financial incentive, formal delegations, and ceremonies dedicated to praising gifted students and their parents.

The third and final study, completed in 2005 under the direction of Dr. Mohammad Salem Al Dhaheri, Executive Director of school operations at Abu Dhabi Education Council, indicated that previous research had underestimated the work done in Arab countries regarding gifted education (Abu Dhabi Education Council, 2015). According to Al Dhaheri, the decade starting in 1994 was characterized by competition among Arab countries in matters of identifying gifted students, efforts to meet their needs and nurturing them properly to create intellectual, scientific and financial leadership on the one hand, and to stop the “brain drain” on the other hand. This positive change was, according to Al Dhaheri, the result of a report written by the ministers of education and the ministers in charge of financial planning in the Arab countries in June 1994. The report offered the following six recommendations: (a) institute academic acceleration; (b) establish enrichment centers; (c) grant financial benefits to high school graduates with the best educational achievements; (d) arrange yearly national and regional competitions for all Arab countries; (e) announce frequent conferences, symposia, and scientific meetings for discussion of nurturing talent and creativity; and (f) open special schools for gifted students to attract high-achieving, creative, and highly intellectual students.

Gifted education in the Arab world has advanced enormously in the last 2 decades. The broadest definition of which countries are considered Middle Eastern would include no less than 15 states: Turkey, Lebanon, Israel, Jordan, the Palestinian Authority, Syria, Egypt, Kuwait, Iraq, Bahrain, the UAE (including Abu Dhabi, Ajman, Dubai, Fujairah, Ras al-Khaimah, Sharjah, and Umm al-Quwain), Saudi Arabia, Qatar, Oman, and Iran. To make it possible to summarize the important issue of gifted education in the Middle East, this chapter focuses

on six countries (Israel, Jordan, Lebanon, the UAE, Saudi Arabia, and Oman). The following countries are working on issues of gifted education, but are not included in this chapter.

- Turkey: Turkey has been very active regarding research and programming for gifted students. Although gifted education only started at the end of the 20th century, it has developed rapidly since (Gökdere, Küçük, & Çepni, 2003). Currently, there are two international journals dedicated to gifted education, which are published in Turkey—*International Online Journal of Educational Sciences* and *Journal for the Education of Gifted Young Scientists*. These journals are encouraging research in gifted education, in addition to supporting national and international conferences and meetings on gifted education (e.g., Third International Conference on Talent Development and Excellence, Antalya, Turkey). Turkish scholars are eager to learn from the experience of others (e.g., David, 2015), regardless of the political situation that has caused difficulties maintaining such connections.
- Syria: Prior to the civil war in 2011, the situation regarding gifted education was not very promising in Syria, even though Syria was one of the nine countries that returned a completed questionnaire for the 1982 study “Educating the Intellectually Excellent in Arab Countries” (David, 2014a). Syria has not started its formal education, has encouraged no scholars in this field, and has not substantially changed its rigid, traditional education system to better fit the needs of gifted students. Since the civil war even the few buds of gifted education that started to blossom (e.g., the supporting of science education that might lead to the developing of gifted education) have withered.
- Egypt: This very large country, located in north-east Africa, has been called “a country that in many ways represents the heart of the Arab world” (Gibbs, 2009). However, as it is geographically in Africa, and its main gifted education contacts are with other African countries, it is not included in this chapter.

- The Palestinian Authority: Unfortunately, despite the huge efforts the Palestinian Authority is making in advancing the educational level of its students, gifted education is still not one of its priorities, and official, free education for gifted students resembles that of other Arab countries before the 1995 “revolution.” (This revolution started first in Jirsan, with two main events: the founding of the Arab Council for Gifted and Talented with representatives from 21 Arabic countries, and the first Scientific Arab Conference on Gifted Education, which took place in Amman.) Palestinian scholars in the field of gifted education are mentioned in connection with Israel, Jordan, and Lebanon, as discussed in the sections that follow.

## ISRAEL

Free, public gifted education started more than 40 years ago, in December 1973. However, by 2015, there were only seven elementary schools, 15 junior high schools (all in the Jewish sector), and 18 high schools (15 Jewish, 3 Arab) that offered classes for gifted students (Division of Gifted and Talented Students, 2015a, 2015b, 2015c). Each year, approximately 5,000 students are identified as eligible for gifted education, defined either as *gifted* or *excelling*; however, only about 125 (0.25%) have access or opportunity to enroll in a gifted class operating 6 days a week.

According to Freeman (2002), “In . . . Israel, the government provides generously, often using self-selection” (p. IX). A later report indicated that of all surveyed countries, only Israel provided gifted education for all children (Jewish and Arab), and had a special department for gifted children in the ministry of education (Freeman, Raffan, & Warwick, 2010).

### Ministry of Education’s Special Programs for Gifted Students

The Henrietta Szold Institute identifies gifted and excelling students by administering selection exams to special programs offered by the Ministry of Education. These exams are usually given in Grades 2 or 3 and they have two stages: Stage 1 has all students

take an initial “filtering” examination in literacy and arithmetic, which is revised every year. Students who score in the top 15% of each class on these exams are invited to take Stage 2 examinations, which assess their general cognitive ability. Students who score in the top 1.5% to 5% of each class on these exams are invited to participate in a variety of programs for gifted and excelling students, which are offered in approximately 50 Israeli centers (David, 2014b).

“Israel identifies the top 10% with a combination of cognitive tests and teachers’ ‘gut feelings.’ The top 0.5% are seen as different and termed ‘super-gifted’ or ‘geniuses’” (Freeman et al., 2010, p. 12). Israel suffers from a lack of good teachers (in general education and in gifted education), unlike other countries where gifted education was established more recently (e.g., David & Wu, 2012), but which have already developed suitable teachers for gifted students (e.g., David, 2011, 2016).

Complaints about the Israeli identification system have been constantly raised by educators and parents; the Ministry of Education, in response, has promised to update the identification exams. Unfortunately, the promise of “new tools” for identification of gifted students in Israel started about 4 decades ago (e.g., Burg, 1988; Szold Research Institute for Behavioral Sciences, 1989; Vorgan, 2006), but no new assessment tools have been adopted.

Furthermore, some children qualify for special provisions, including gifted elementary classes, in certain geographical areas but not in others (David, Gil, & Raviv, 2009). Israel also applies a policy of affirmative action regarding the acceptance of girls to gifted programs, so that at least 40% of the students invited to participate in the gifted programs are girls. This policy has been viewed by some as a type of discrimination against boys, given that all programs have a limited number of spaces available (e.g., David, 2012).

The fact that many gifted boys are not accepted to these governmental programs is partially compensated by other programs—initiated by private schools, higher education institutions, private organizations, and nonprofit organizations. A brief description of some of the most successful alternative programs is provided next.

## Alternative Special Programs for Gifted Students

Two of the most demanding programs for mathematically gifted students are acceleration programs. The Program for Youth Talented in Mathematics (<https://www.yuni.co.il>), located at Bar Ilan University, includes about 5,000 students in Grades 6 through 10. Students are placed in 3 tracks: math enrichment, math acceleration (students take the challenging matriculation math exam in Grade 10 rather than Grade 12), and academic education for 16-year-olds. The Beno Arbel Program for Outstanding Mathematics Students (<https://exact-sciences.tau.ac.il/beno-arbel-home>) at Tel Aviv University (David, 2008), is for mathematically precocious 13- to 15-year-old students. During the first year, eligible students are exposed to subjects such as set theory and basic calculus. Students then start university-level studies in math while still in high school. Many of these students receive their bachelor's degree (some even receive a Master's degree) before their 19th birthday. This program is recognized as the best one in Israel. Its graduates prove outstanding in all national and international mathematics competitions and olympiads.

There are also various programs in Hebrew and Arabic for youth interested in science at the Dov Lautman Unit for Science-Oriented Youth at Tel Aviv University (<http://noar.tau.ac.il/enoar>) and the Davidson Institute of Science Education (<http://www.weizmann.ac.il/pages/science-education>), including distance learning, e-learning, science summer camps, and other tools of integrating technology into science education. Science activities for children and youths (2015) were organized by the Hebrew University both in Jerusalem and in Rechovot (at the faculty of agriculture), the Ilan Ramon Youth Physics Center (2015), and the newly opened Jusidman center for youths at the Ben-Gurion University of the Negev, Beer Sheba.

Unlike the special gifted classes described previously, special schools are not labeled as "schools for the gifted." Five such Israeli institutes are described next.

**Israel Arts and Science Academy.** Founded in 1990 for Grades 10 through 12, this school serves

outstanding students—not necessarily identified as gifted—within a boarding school environment that nurtures exceptional talent in science, mathematics, music, and the arts (<https://www.jewishvirtuallibrary.org/jsource/Learning/three.html>). The target population has been youth from the entire state, including orthodox and secular Jews, Muslims, Christians, and Druze Arabs who have shown exceptional talent or potential. Every year the school sends delegations to various national and international competitions and olympiads.

**The MOFET Association.** Formerly Amuta Jerusalem School of Physics and Mathematics (Passow, 1995), this school (<http://www.reshetmofet.org/iw>) was founded in 1992 following the massive emigration of about 700,000 Jews from former USSR countries. Its aim is to help gifted high-school students who are repatriates adjust to the Israeli system of education. By 1997, the MOFET Association has spread its unique science classes to hundreds of students in Grades 7 through 12 across 12 major cities, offering high-level math, physics, computer science, and English classes, as well as personal empowerment for the students, parents, and teachers.

**Erika Landau Institute.** The Erika Landau Institute for Youth Advancement of Creativity and Excellence (<http://ypipce.org.il>), operating at Tel Aviv University, is the oldest and largest framework in the country to promote talented and gifted children. Since its establishment as an association, more than 40,000 students have taken enrichment classes.

**Future Scientists and Inventors of Israel.** This program develops and nurtures motivated students in Grades 9 through 12 with high abilities and scientific tendency who do not realize their potential (<http://www.fsi-israel.org/#!be-a-partner/cgvr>). The Dov Lautman Unit for Science-Oriented Youth was the first higher education institution that adopted this program in 2009; today its partners include the Hebrew University of Jerusalem, the Technion, the Ben Gurion University of the Negev, and the Tel Chai academic college, as well as eight additional institutions.

**Noam Center: Mathematics for Talented Youth at the Technion.** The Noam Center (<http://www.math.technion.ac.il/Noam/noam-en1.html>) is in charge of four different mathematics programs primarily serving high school students.

Gifted education in Israel does not necessarily help gifted students materialize their gifts (David, 2013). Achievements of Israelis are far less than would have been expected for a population that includes almost half of the Jews in the world. It can be concluded that many gifted Israeli children do not fulfill their potential. Many gifted Israeli students are not able to reach their potential because of an inappropriate identification system, the affirmative action that contributes to many highly gifted boys not being accepted to gifted programs (whereas many girls who are accepted choose not to participate or dropout), the lack of suitable teachers and limited special programs, and most important, the lack of psychological and educational support of professionals, who are experts in the psychology of gifted students and the didactics of the gifted educational system. Success in education of gifted students depends heavily on teachers' personal characteristics and on their value system rather than on their educational level or their knowledge of gifted education (e.g., Tischler & Vialle, 2009). Despite the full identification of giftedness in Israel, the small percentage of gifted students who get gifted education, the fact that gifted education is centralized (e.g., collection of data should be uncomplicated), the small size of Israel, and the fact that Israel is the only country surveyed by Freeman et al., (2010) who has a department of gifted education, there is almost no Israeli research about potential influences of education for gifted students and achievements in Israel. Because education of gifted students is not the task of educational psychologists, but rather that of teachers and administrators, gifted education should be studied if the number of gifted children harmed by the nonprofessional, unstudied, and unsupervised experts is as high as can be assumed by the dropout rate from all gifted programs (e.g., David, 2011).

### **Gifted Arab Students in Israel**

Most Arab parents and educators in Israel want their gifted children to be more learned in mathematics,

languages, science, and technology so they can materialize their talent in the modern world, as minorities tend to improve their social and financial status through education (David, 2014a). Jewish parents and educators, on the other hand, prefer enrichment for gifted students in a variety of subjects, such as nature-inspired design, games, yoga, music, creative thinking in art, and many more. These subjects sound appealing, but they do not help students gain a strong scientific, humanistic, or artistic base.

David (2014c) provided a detailed description of the gifted Arab student living in Israel. Gifted Arab students living in Israel are more disadvantaged compared with Jews, as well as with Arabs living elsewhere, because of the difference between the teaching methods in the Arab sector in Israel. According to Majid Al Haj, a former member of the Council for Higher Education and former vice president and dean of research of the University of Haifa, "the teaching methods . . . are based on accumulating information to regurgitate it during the exam without any development of critical, creative or logical thinking" (Ali, 2013, p. 25). Therefore, it is quite difficult for gifted Arab students to compete with gifted Jewish students regarding admission to prestigious higher education institutes. There are three main solutions Arab parents of gifted students have developed to overcome this difference: send their children to high-quality Christian institutions, if available, even if the students are Muslim; send their high school graduates to study abroad; and/or demand that their children learn mathematics, English, Hebrew, and Arabic in enrichment programs (David, 2014c).

In East Jerusalem, the Arab population is about 300,000, and about 25% of Arabs have Israeli citizenship. The intention of the Israeli department of education was to open a class for gifted Arab children in Haifa in the 2015–2016 school year ("The First Class for the Gifted in the [Arab] Sector," 2015). However, as per the data provided by the Israeli Ministry of Education, such a class did not open in the 2015–2016 or the 2016–2017 school year (Division of Gifted and Talented Students, 2015a).

The first and only initiative for training Arab teachers in gifted education was headed by Hanna

David, who opened a 4-semester program of training teachers in gifted education at the Teachers' College of Sakhnin in 2006. The first semester included 4 courses aimed at teachers of math, English, and special education. However, the Israeli Ministry of Education refused to support the program financially, claiming that there was no need for a special program for Arab teachers who could have been trained at Jewish institutions, and the program did not proceed beyond the first semester.

An interesting example that stresses the situation regarding gifted education in East Jerusalem is provided by Elyan (2012). It explores the experience and the concerns of gifted Palestinian girls in East Jerusalem who live in difficult political, economic, social, and educational circumstances. These girls are ignored on multiple levels; their giftedness is neither identified nor encouraged because of a complete lack of systematic research, policy support, and educational opportunities. Elyan sheds light on the fact that there is no gifted education in East Jerusalem (David, 2014c) and that gifted girls suffer more than gifted boys, being a minority within a minority (David, 2002).

Despite the many milestones for gifted education accomplished in Israel (e.g., free screening for giftedness of all students, a department of gifted education, a large percentage of Jews who have gained many achievements and earned many prizes; David, 2009), there are considerable gaps in progress in gifted education in Israel—a lack of professionalism, failure to meet its goals, and no studies showing that the 42-year investment in gifted education has resulted in any achievements.

## JORDAN

According to Kaylani (1985, as cited in Hamdi & Hamdi, 1989), gifted education started in Jordan in the 1984–1985 academic year:

A pioneer project for the gifted-talented students at the secondary school-level was started in the city of Salt in the academic year 1984-5 by a private foundation. 60 male and 30 female students were selected to participate in the

program from the upper 95th percentile of first-secondary students attending Salt schools on the basis of their mental aptitude, scholastic achievements, personality adjustment, creative abilities and medical-physical fitness. Gifted-talented students are provided with an afterschool enrichment program in math, science, English language and computer studies. (p. 130)

According to Awamleh, Al Assaf, Borini, and Rahman (2013), the Salt program started in 1982. Although gifted education started in Jordan more than a decade after it did in Israel, Jordan had preceded all other Arab countries by at least a decade. Since the establishment of the first gifted center, 17 similar centers have opened by 2007. The catalyst for the opening of the Salt center was the translation and standardization of the Arabic version of the Stanford–Binet intelligence test in 1987 (Awamleh et al., 2013). This version enabled all other Arab-speaking countries to identify for giftedness according to objective, scientifically accepted criteria.

Unlike in Israel, where the initiative of gifted education started at the Ministry of Education, it took about 10 years until education for gifted student became a part of the ministry's activities in Jordan.

The MOE through the Directorate of Special Education and the Division of Programs for the Gifted, which was introduced in 1995, supports the gifted student, whereby a gifted student is promoted to a higher class suitable to his capabilities. This unusual promotion is not allowed more than twice for the same student during the basic cycle. Through the Noor-Al-Hussein Foundation the services for students who are gifted had been started by establishing the Jubilee School. This school is a coeducational secondary school where gifted students are grouped at the tenth, eleventh and twelfth class levels, and offers acceleration and enrichment programs. (Al Jabery & Zumberg, 2008, p. 118)

The establishment of the King Hussein Foundation occurred in 1977, which was a cornerstone year in gifted education in Jordan. Its flagship project, the Jubilee School (<http://www.jubilee.edu.jo>), is headed by Queen Noor. Since 1993, the school functions in its present structure as “Jordan’s first independent, residential co-educational secondary school for students with exceptional academic ability in 1993, emphasizing opportunity for students from the less developed areas of the Kingdom” (<http://www.kinghusseinfoundation.org>). The school focuses on an education and leadership program, an advanced use of technology, and a cultural exchange. Nearly all of the school’s graduates (99%) attend highly competitive colleges and universities in Jordan, elsewhere in the Middle East, Europe, and the United States. In 1997 King Hussein and Queen Noor, along with local and international philanthropists, established a scholarship fund to assist students with significant financial needs, which enables accepted students to study at the school and live in its dorm. By 2007, the scholarship fund had provided partial and full scholarships to 95% of the graduates.

On July 22, 2015, the 19th graduating class of the Jubilee School, which included 103 graduates, received their diplomas from Queen Noor Al-Husain, who showed her continuing commitment to the school initiated and supported by her family. One of the main themes of the school—bringing together students from a variety of socioeconomic backgrounds—has been maintained since its foundation and the opening of its dorms for students living in the periphery and in non-urban areas.

Jordan has gone beyond identification of the highly able intellectually. Alsrouf and Al-Ali’s (2014) research and field work in creativity is based mainly on works done on the Master Thinker program (Aba-Alkhalil, 2004; Alsrouf, 1996) in Jordan and Saudi Arabia. The aim of the Alsrouf and Al-Ali’s study was to examine creative thinking in preschool children. The study used Torrance’s Thinking Creatively in Action and Movement Test (1981) to assess motor creativity. The sample consisted of 562 children (260 girls and 302 boys; 183 3-year-olds, 188 4-year-olds, and 191 5-year-olds). No gender differences were found, but fluency and

originality scores increased significantly with age. The most interesting finding of this study was that children who were attending a private kindergarten scored higher than those in public or governmental kindergartens. This finding needs further research to differentiate between the influence of the home and that of the school regarding creativity; as private kindergartens are not free, the socioeconomic status of children in these kindergartens is higher than that of children who attend public or governmental kindergartens. Therefore, the better creativity results of children as young as 3 to 5 years old need to be analyzed, and if the quality of public kindergartens is much lower than that of private kindergartens, an intervention may be warranted.

## LEBANON

Gifted education in Lebanon has not been particularly developed as of 2015. However, Lebanon is the home of many scholars in education and psychology, and hosts the American University in Beirut (established in 1866, the oldest higher education institute in the Middle East), one of the top world universities that have a great influence on the Middle East. Although Lebanon is among the leading countries in gifted education, it is included in this chapter because of the fact that many of the scholars of giftedness have been a part of the Lebanese education system (some with Palestinian roots). In addition, some of the educational programs—for gifted children in particular—are multinational. In Lebanon, The United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) institutions have started to work for Palestinian refugees from Syria, in addition to their traditional task working for the Palestinian children living in Lebanon (“Back to School in Lebanon With UNRWA, UNICEF, and EU,” 2013).

According to Inati (1999), there were no data about the number of gifted students in Lebanon. At that time, despite the need of special curriculum for gifted students, there was not even a plan for such education. Lebanon has made the largest advancement in gifted education in the Middle East in the last decade. However, “no mention of the education of gifted students exists in the

Lebanese law” (Sarouphim, 2015, p. 198). In addition, less than 1% of Lebanese schools established a system for identifying and nurturing gifted students (Sarouphim, 2015). On the other hand, Lebanon has a long tradition of good education at all levels, it has been a leader in higher education for all neighboring countries throughout the 20th century, and has an outstanding, wide-spread Christian, private education system. The two main reasons for this change have been the consistent, hard work of two Lebanese scholars in giftedness—Anies Al-Hroub and Ketty M. Sarouphim—and the will of 98% of Lebanese schools who “expressed their desire to start such programs should they receive the needed assistance and personnel training” (Sarouphim, 2015, p. 209).

The main subareas of giftedness that have been studied in Lebanon include dual exceptionalities, psychometric and dynamic assessment, mathematical giftedness, self-concept, beliefs, and attitudes. Currently, there is an ongoing project to adapt the Wechsler Intelligence Scale for Children to the Lebanese context. In addition, Sarouphim (2010, 2015) concentrated on the DISCOVER project, aiming to apply it as the main tool in the identification of giftedness in Lebanon, as well gender issues, minority and ethnic issues, math education, multiple intelligences, and violence and bullying in school—all of which are related to giftedness.

The suggested model for gifted education in Lebanon includes three stages: raising community awareness, adopting valid identification measures, and developing effective curricula (Sarouphim, 2010). Unlike in other Middle Eastern countries, where identification is based on intelligence tests and programs are aimed at the needs of mathematically and verbally gifted students, DISCOVER uses nontraditional views of intelligence and giftedness, and the identification process does not exclude students who are gifted in other areas, such as computers, sports, or the arts.

Currently, DISCOVER is not just a model for identification of gifted students; it has analyzed the results of the Raven Standard Progressive Matrices (RSPM), which was completed for 248 Lebanese students in Grades 3 through 5. Teachers and parents of identified students were interviewed.

There was evidence for DISCOVER’s concurrent validity with RSPM, as well as high correlations between students’ DISCOVER ratings in spatial intelligence and their RSPM scores; correlations between students’ DISCOVER ratings in linguistic intelligence and their RSPM scores were low (Sarouphim, 2009).

In addition, studies in a variety of subjects related to giftedness have been carried out in Lebanon. For example, Ghamrawi (2014) studied multiple intelligences and English as second language in teaching and learning in a private school in Lebanon.

Indeed, the long hard work has proved worthwhile. Sarouphim-McGill (personal communication, May 23, 2015) had informed me that

There is one development that does not appear in the article [Sarouphim, 2015], which is that for the first time in Lebanon, the Lebanese American University will be offering a Teaching Diploma (starting Fall 2015) in Special Education that includes courses on giftedness. Therefore, LAU is a pioneer in offering courses in the education of the gifted in Lebanon. This diploma will enable those who pursue it to teach gifted students; thus, schools can no longer claim that they do not offer programs for the gifted because specialists in the field do not exist in Lebanon. This diploma is expected to be a catalyst as to launching gifted education in the country.

## UNITED ARAB EMIRATES

The UAE include seven Emirates: Abu Dhabi, Ajman, Dubai, Fujairah, Ras al-Khaimah, Sharjah, and Umm al-Quwain. The total population has not yet reached 10 million people, and only Abu Dhabi and Dubai have a population larger than one million people (but Sharjah’s population also is nearing one million). Abu Dhabi is the largest of the UAE’s seven member emirates and is the capital of the federation. The fact that most of the UAE’s area is a sparsely populated desert and most of its population

consists of immigrants from a variety of countries have made it quite difficult to develop its education system in general and its gifted education, in particular. Although gifted education in the UAE started at the beginning of the 21st century, it has grown fast, using all available means (e.g., financial), and there are already many existing programs for nurturing gifted students and many initiatives for new programs.

One of the means of spreading knowledge about gifted education and planning programs for gifted students has been conventions, conferences and meetings for scholars and educators in all main locations of the Emirates. Since 1998, there have been six regional conferences in Dubai.

The UAE is also open to private initiatives in the fields of giftedness and creativity, such as the Creativity Workshop that took place in Dubai in December 2015. The UAE is one of two Middle Eastern countries (along with Saudi Arabia) belonging to the Asia-Pacific Federation of Giftedness. It is the only Middle Eastern country that hosted the Biennial Asia-Pacific Conference on Giftedness.

One of the most studied areas in giftedness is the misdiagnosis of gifted students. It happens quite often that gifted children are diagnosed as having attention-deficit/hyperactivity disorder (ADHD) because of a high-energy level, boredom in the classroom, an ability to learn quickly, and a desire to learn more than what is available to them. This can make students behave nervously, move physically, and jump from one subject to another. However, the study of ADHD is not well developed in the Middle East, and Elhoweris's (2014) study, combining theoretical background with field work that helps preservice teachers differentiate between giftedness and ADHD, is of a great importance (see Chapters 35 and 37, this handbook).

At the beginning of the 21st century His Highness Sheikh Hamdan bin Rashid Al Maktoum founded a center for gifted students, which included enriching programs and special classes for advancing talented students in the humanities, social studies, economics, and technical areas. The center has been working in collaboration with academic institutions locally, regionally, and internationally.

Programs supporting gifted students, which included workshops, empirical works, discussions, school support, individual programs, visits, scientific expeditions, athletic programs, and entertainment programs, were offered at the center from 2002 to 2005. In September of 2006, a national plan for supporting gifted students was prepared.

The opening of the center was preceded by educational and psychological work of individual scholars, preparing the necessary tools for identification of gifted students and mapping of their needs. One of the examples of such work is that of Al Jalahma (1999), who conducted a study in the UAE University that aimed at standardizing Raven's Colored Progressive Matrices Test on a sample from the UAE population. This work has been in use in Middle Eastern countries for the identification of young gifted children. Some of the main actions supporting gifted students in the UAE are discussed next.

### Formal Recognition of the Needs of Gifted Students

The Ministry of Education and Youth has recognized the different educational needs of gifted students, along with those of students with special needs (United Arab Emirates, 2015). The special education department has initiated several pilot and other projects to address the needs of students with advanced capabilities and aptitudes. These projects seek to provide students who exhibit high degrees of intellectual ability and social and psychological development with a wider scope of learning and educational experience. The project follows a methodology of grouping students homogeneously, significantly enriching the content of the curriculum, and promoting students from one stage to another depending on their ability and achievements.

### Recruitment of Good Teachers

The Ministry of Education and Youth looks to hire engineers and fresh graduates from prestigious universities, nationally and internationally, to become teachers in state schools. Potential candidates will receive high salaries, but they must go through advanced training courses for 6 months (Al Khoori, 2015).

The establishment of the Dubai-Sharjah-Ajman metropolis (Al Qassemi, 2012) opened new possibilities in the area of education in the UAE. Until the second decade of the 21st century, the population of five of the seven Emirates was less than one million. The Dubai-Sharjah-Ajman metropolis, combining the urban areas of 3 Emirates, is already home to about 3 million people, with a potential of fast growth. Its 15 international schools already offer 4 baccalaureate programs, and the number of universities and students are growing rapidly.

The financial prosperity of the UAE has undoubtedly contributed to its development in many areas, but the advancement the Emirates have gone through in education, and gifted education in particular, is most remarkable. The UAE have invested in all stages of development needed for nurturing gifted students, from supporting promising educational staff to identifying gifted students, offering grants and prizes for outstanding achievements, and honoring gifted individuals in the media, as well as allocating substantial financial support. All these means might help the UAE become a modern, advanced country because of its high skilled population rather than just because of its natural gifts.

## SAUDI ARABIA

Governmental policy regarding gifted education in Saudi Arabia preceded academic support for gifted students. In 1969, the Saudi government endorsed a bill entitled “The Education Policy of the Kingdom,” which included a focus on “devoting attention to gifted and talented students” (Al Qarni, 2010), but actual education of gifted students started only in the early 1980s. Although many gifted graduate students left Saudi Arabia to acquire a PhD in education or psychology, the *Directory of the Doctoral Dissertations of the Saudi Graduates From American Universities 1964–2005* (Kingdom of Saudi Arabia, Ministry of Higher Education, 2006) shows that, since the 1980s, only 9 dissertations out of over 620 were in the field of giftedness. The scholars who wrote these dissertations framed the base of gifted education in Saudi Arabia.

According to Chakroun and Abu Safieh (2012), “Arab Islamic States [are] keen to discover gifted

children from an early age by adopting measures to identify cognitive and non-cognitive excellence” (p. 86). The means to achieve this aim in Saudi Arabia include basic education, higher education, and governmental and nongovernmental associations (e.g., King Abdulaziz City for Science and Technology; Chakroun & Abu Safieh, 2012).

Talent detection started at the King Faisal University in 1990. Official gifted education started in Saudi Arabia in 1999, with the Saudi Talent Search Project (Al Nafie, 2001). According to Al Nafie, Al Gateai, Al Dudiban, Al Hazmi, and Al Saleem (2000), King Abdulaziz City for Science and Technology, in collaboration with the Ministry of Education, supported the National Project for Identifying and Servicing the Gifted, which founded two enrichment programs for gifted students—one in science and one in math. These were the first programs for gifted students in Saudi Arabia. The first program, aimed at high ability preschool children, started in the 2010–2011 school year.

Gifted education in Saudi Arabia is centralized. The King Abdulaziz and His Companions Foundation for Giftedness and Creativity was founded in 1999, an independent nonprofit organization based in Riyadh and dedicated to identifying and supporting young gifted and talented Saudis (Dracup, 2011a).

Like in Israel, gifted education in Saudi Arabia is entrusted to the ministry of education. Through this office, the ministry of education provides acceleration, grouping, and enrichment (Al-Hamdan, 2013). In addition to acceleration, grouping, and enrichment programs, Saudi students have participated, with full encouragement of the King Abdulaziz and His Companions Foundation for Giftedness and Creativity (Mawhiba), in a variety of local, regional and international competitions, scientific events and celebrations, science camps, and olympiads.

In 2007, the Saudi ministry of education, Jeddah, published instructions regarding the possibility of academic acceleration (i.e., grade skipping) for gifted children (Shalhoub, 2007). At first, the policy applied only to students in Grades 7, 8, and 9. The decision to allow students to skip a grade was based on several criteria: GPA, IQ tests, general exam results, and the psychological ability of students to cope

with an environment where their peers are older. A new proposal for the educational advancement of gifted students was suggested in Saudi Arabia in 2014 (Tawalbeh, 2014), advocating that schooling for gifted children would be reduced from 12 years to 6 years. The conditions for such drastic acceleration include “excellent skills in all subjects, scoring an average of 98 percent with at least 97 percent in each subject, getting through a talent test and finally a personal interview” (Tawalbeh, 2014).

### The Gender Aspect

Until 2010, Saudi Arabia had 22 summer programs for 960 gifted boys and girls (Freeman et al., 2010). According to Mawhiba, gifted education in Saudi Arabia (Dracup, 2011a, 2011b) is where “schools are segregated by gender but males and females follow the same curriculum and take the same examinations.” Although gifted boys in Saudi Arabia have long been participating in various activities during the school year and during school vacations, it was only recently that gifted girls were afforded similar opportunities. In 2015, the Center for Excellence in Education initiated a science research program for 50 high-achieving middle school girls with the University of Dammam in Saudi Arabia, The King Abdulaziz and His Companions Foundation for Giftedness and Creativity, and Saudi Aramco, which encouraged science, technology, engineering and mathematical (STEM) studies (Palmer, 2015).

From 1999 until 2007, the Saudi Ministry of Education has offered special programs for 66,000 students (Al Qarni, 2010). Al Qarni (2010) offered several findings in his analysis of the policies, expenditures, and outcomes related to gifted education. Al Qarni’s main finding was that the enormous amount of investment in gifted education in Saudi Arabia did not justify the comparatively poor results. This is serious criticism coming from a Saudi scholar specializing in gifted and talented education. This is not the only criticism on gifted education in Saudi Arabia. Dracup (2011a, 2011b) and the Saudi Arabia National Research Centre for Giftedness and Creativity (Gifted Phoenix, 2011) have provided critiques of the current state of gifted education in Saudi Arabia. However, Al Qarni’s work is a scientific work written by an Arab who had access

to all Arabic sources and should be taken more seriously than the others who relied on English official publications.

Criticism of the Saudi system’s support of gifted students has come from additional sources. For example, Muammar (2015), who studied leadership qualities among gifted students in Saudi Arabia, concluded that intellectually gifted students lacked essential skills to prevail in the global competitive economy. Alamer (2014) focused on the three most important difficulties Saudi Arabia education system must overcome to properly nurture its gifted students: (a) the nature of the Saudi educational system, (b) the structure of curricula, and (c) the lack of appropriate teachers. There is also a shortage of suitable learning materials. Alamer’s findings demonstrate that education in Saudi Arabia is still behind global standards. The balance between Islamic and Arabic studies and scientific subjects is still uneven. In addition, the preparation and training programs of Saudi teachers to deal with students, and gifted students in particular, need substantial improvement.

### Giftedness in Art

Abunayyan’s study (1994) about artistically gifted children in Saudi Arabia sheds light on one of the main issues regarding talent in art—whether it is possible to develop valid criteria for identifying artistically gifted children, as well as the discussion on identification in the Arab world.

Despite many cultural differences between Saudi and Western students, Abunayyan (1994) found that general features of giftedness extend across both traditions. Furthermore, the artistic performance of Saudi students revealed that they might be “bicultural”—they excelled in traditional Islamic tasks involving architectural and calligraphic design, as well as in producing fantasy drawings and graphic narratives typical in the West.

### OMAN

Until 1970, there were only about 1,000 students in just 3 schools in Oman. By 2011, primary school enrollment included 97.6% of children living in Oman and 87% of the total adult population was literate (UNICEF, 2015).

Informal education for gifted students started in Oman in the 1970s. A school for girls was opened at that time and academic acceleration became a common practice. In 1981, the first school for high-achieving girls was founded, and

students were accepted to this particular school based solely on their test scores at the end of sixth grade. . . . Unfortunately, the school did not last very long as the focus of the school changed into that of a regular public school. (Al-Lawati, 2013, p. 33)

Formal gifted and talented education started in Oman in 1999 (Al Nafie et al., 2000). However, in 2009, the Ministry of Education was still searching for a word that would adequately describe exceptional or gifted students. The Arabic word for gifted students is *mawhubeen*, originating from *mawhibah*, and is used in most Arabic speaking countries, so the Oman Ministry of Education concluded that the word *mujeedeen* (meaning glorious) best describes such students. This word is unique to Oman and implies not only high ability but also much respect and great hopes for future achievements (Al-Lawati, 2013). Unfortunately, “since the time when this word for exceptional and above-level children was established in Oman, no further efforts were made to accommodate these (*mujeedeen*) students” (Al-Lawati, 2013, p. 32). Indeed, very little effort was put into gifted education in Oman beyond coming up with a name for giftedness.

The attitude toward gifted education in Oman is generally positive. This explains, at least partially, their intention toward developing gifted education, which gives hope for a better future in this area. One of the main indications of this attitude is that although in the West gifted education meets (in many cases) rejection, and it gets very limited (if any) financial support, Oman approaches the issue the other way around. Two grants were awarded to scholars in the field of gifted education (Sultan Qaboos University, 2010). Six others were granted to studies of existing tests and standardization and adaptation of tests used to identify talented and gifted students.

In addition to these six studies, a few important publications in a variety of subjects related to

giftedness have been published. In a study of the Raven Coloured Progressive Matrices Test given to Omani children ( $N = 1,042$ , ages 5–11), Kazem et al. (2009) showed that the test could be used for detecting learning difficulties. This study had the potential to help with medical decisions when applied to hospitalized children, as it was deemed a good means for measuring children’s intelligence. Kazem, Alzubaidi, Hemdan, and Renzulli (2014) also studied Rating the Behavioural Characteristics of Superior Students (SRBCSS; see also Renzulli et al., 2002). Participants included 672 students (310 girls and 362 boys) in Grades 5 through 10 from several parts of Oman. Exploratory factor analysis of the fourteen scales was conducted and the results of the study support the factorial validity of the SRBCSS. A study on Teachers’ Efficacy Beliefs in Identifying and Teaching Gifted Students (Aldhafri, 2015) showed that the teachers had high levels of efficacy beliefs in identifying and teaching gifted students, with no gender differences. This study also found that teachers with a Master’s degree had a higher level of efficacy beliefs than those with a bachelor’s degree.

Indeed, gifted education in Oman is in its very early stages, but it has the potential to grow fast, and it gives hope that Oman, a top rank “player” in the field of conferences and research initiatives, will become a country that pushes forward and influences the Arab world in this area. The combination of supportive public opinion, financial and educational support for new studies at the largest university, initiatives that will help identify and nurture gifted students, and the presence of scholars at all levels, from undergraduate students to leading researchers in giftedness, almost guarantee it.

## SUMMARY AND CONCLUSIONS

One of the main problems of identifying gifted students in the Middle East is the lack of appropriate tests, along with a shortage of diagnosticians who are also experts in giftedness. Of the six countries described in this chapter, Arabic is the primary language in five of them. Hebrew is the official language in Israel, but Arabic is the primary language of about 20% of the population.

The identification of gifted students in Israel has been described in detail elsewhere (e.g., David, 2014d). However, six key points noted as follows:

- There are serious problems stemming from the tests that identify gifted students. Gifted students are often underidentified—the rate of false positives is low and the rate of false negatives is high. The IQ ceiling, which qualifies students as gifted, is low. The 1960/1973 version of the Stanford–Binet Intelligence scale had an “inadequate ceiling for adolescents and highly gifted examinees” (Becker, 2013, p. 7). The revised Stanford–Binet Intelligence Scale, Fourth Edition (Thorndike, Hagen, & Sattler, 1986) had a ceiling of IQ = 148 (David, 2014d), which was translated into Arabic in 1998. However, this was still too low, as the number of individuals with an IQ over 150 are estimated to be 1:1000. The Stanford–Binet Intelligence Scale, Fifth Edition was published in English in 2003, but was not translated into Hebrew or Arabic. There is also a lack of proper identification and support of gifted students with learning disabilities (e.g., twice-exceptional students; see Al-Amiri, 2011; Al-Hroub, 2013; Al-Hroub & Whitebread, 2008).
- Academic acceleration (i.e., grade skipping) is complicated and rare in some countries (e.g., in Israel; Dracup, 2011a), a regular/common practice in others (e.g., in Saudi Arabia; Shalhoub, 2007), and cancelled in others (e.g., in Oman; Al-Lawati, 2013).
- Despite the massive financial investment in Mawhiba gifted education, gifted Saudi students are not receiving educational care that meets their needs. Gifted students would benefit from intensive programs in math and sciences (Batterjee, 2013). Although Israeli gifted students benefit from university programs, private schools and institutions, and nonprofit organizations, there is no evidence of any advantages that graduates of these activities have over other students. Furthermore, the students with high achievements in the matriculation exams and high acceptance rates to prestigious universities in Israel and abroad are graduates of Christian schools—where half of the population is Muslim (e.g., David, 2002, 2014a, 2014c). These schools do not participate in the Israeli programs for gifted students initiated by the Ministry of Education.
- There is a substantial gap between the use of the term *creativity* in programs for gifted students and the actuality of its limited place. The nurturing of creativity is one of the main aims of all programs for gifted students in all Middle Eastern countries. However, with the exception of the Erika Landau Institute in Israel, there is no data about any large, institutional, practical implementation of creativity, despite several publications on the matter (e.g., Aba-Alkhalil, 2004; Alsrour, 1996; Alsrour & Al-Ali, 2014; Chakroun & Abu Safieh, 2012; David, 2016) and even an article related to the use of Torrance’s creativity test with Saudi Arabia students (Aljughaiman & Grigorenko, 2013).
- Dynamic assessment, a highly interactive process of conducting a language assessment, seeks to identify the skills that an child possesses, as well as their learning potential. It is a preferred means of diagnosis, but is still at the very beginning stages of development in all Middle Eastern countries. Some initial work has been done in Lebanon, Jordan (Al-Hroub, 2013), and Israel (David, 2016).
- There is a general resistance to psychology (David, 2010), because a religious-ethical-social taboo exists on many subjects in psychology (e.g., sex, modern theories of child rearing, etc.; Dwairy & Van Sickle, 1996). Thus, in most Middle Eastern countries gifted education focuses on achievements rather than on a combination of students’ well-being and materializing their potential.

Gifted education in the Middle East has gone through a long struggle, and it still has many challenges to overcome. In countries reviewed in this chapter, the general attitude toward gifted education is basically positive, which will be helpful when introducing special programs for gifted students that require substantial investment of additional time and resources. A good financial standing is also helpful, but it cannot replace knowledge, cooperation of authorities and families, and the celebration of the values of excellence, innovation, and creativity by a society.

## APPENDIX 8.1. AVAILABLE TESTS FOR IDENTIFYING GIFTEDNESS IN THE MIDDLE EAST

Behavior Rating Inventory of Executive Function—Preschool Version (BRIEF-P; ages 2–5)  
Comprehensive Test of Nonverbal Intelligence, Second Edition (CTONI-2; Israel; culturally diverse, deaf, linguistically, motor, or neurological disabled populations; ages 6–89)

Developmental Scoring System Rey–Osterrieth Complex Figure Test (Israel; ages 5–14)

Diagnostic Arabic Literacy Language Skills Test  
GATES for Identification of Gifted Students (grades 5–10)

Group of Perceptual Skills Tests

Kaufman Assessment Battery for Children (Hebrew version; ages 3–12)

Mathematics Achievement Test—Dynamic Assessment

Raven's Advanced Progressive Matrices (adults and adolescents of above-average intelligence)

Raven's Colored Progressive Matrices Test (elderly individuals and mentally and physically impaired individuals; ages 5–21)

Raven's Progressive Matrices

Scales for Rating the Behavioral Characteristics of Superior Students (Saudi Arabia)

Stanford–Binet Intelligence Test, Fourth Edition (Arabic version)

Wechsler Intelligence Scale for Children (WISC–III–Jordan)

Wechsler Intelligence Test for Children (WISC–IV–ARB; Arabic version; ages 6–17)

Wechsler Intelligence Test for Children (WISC–R95; Hebrew version)

Wechsler Preschool and Primary Scale of Intelligence (Hebrew version; ages 2.5–7)

## References

- Aba-Alkhalil, A. (2004). *The effectiveness of the Master Thinker program for teaching thinking in developing problem solving behavior among a sample of female students from Preparation Teachers College in Jeddah* (Unpublished doctoral dissertation). Female Education College, Jeddah, Saudi Arabia.
- Abu Dhabi Education Council. (2015). ADEC organizes the “Tanmia professional development week” for 11,000 public school teachers. *Teach Middle*

*East Magazine*. Retrieved from <http://teachmiddleeastmag.com/adec-organizes-tanmia-professional-development-week-11000-public-school-teachers>

- Abunayyan, F. F. (1994). *The identification of artistically gifted male students in Saudi Arabia: Relations among art teacher selection, students' beliefs, and art making abilities* (Unpublished doctoral dissertation). Pennsylvania State University, State College.
- Alamer, S. M. (2014). Challenges facing gifted students in Saudi Arabia. *Research on Humanities and Social Sciences*, 4(24), 107–113.
- Al-Amiri, F. (2011). The Saudi Arabian perspective on the misidentification issues of challenging gifted learners and the development of the four misses model of giftedness and AD/HD. In C. Wormald & W. Vialle (Eds.), *Dual exceptionality* (pp. 106–122). Wollongong, Australia: Australian Association for the Education of the Gifted and Talented.
- Aldhafri, S. (2015, May). *Teachers' efficacy beliefs in identifying and teaching gifted students in the Sultanate of Oman*. Paper presented at the Second International Conference for Gifted and Talented, Al Ain, United Arab Emirates. Retrieved from [http://conferences.uaeu.ac.ae/gtic/ar/papers/63\\_73e.pdf](http://conferences.uaeu.ac.ae/gtic/ar/papers/63_73e.pdf)
- Al-Hamdan, N. (2013). Gifted education in Saudi Arabia: A historical perspective. In P. Sánchez-Escobedo (Ed.), *Talent development around the world* (pp. 21–28). Mérida, Mexico: Lap Lambert Academic.
- Al-Hroub, A. (2013). A multidimensional model for the identification of dual-exceptional learners. *Gifted and Talented International*, 28, 51–69. <http://dx.doi.org/10.1080/15332276.2013.11678403>
- Al-Hroub, A., & Whitebread, D. (2008). Focus on practice: Teacher nomination of “mathematically gifted children with learning difficulties” at three public schools in Jordan. *British Journal of Special Education*, 35, 152–164. <http://dx.doi.org/10.1111/j.1467-8578.2008.00379.x>
- Ali, N. (2013). *Representation of Arab citizens in the institutions of higher education in Israel*. Haifa, Israel: Sikkuy. Retrieved from [http://www.sikkuy.org.il/wp-content/uploads/2013/11/English\\_final-2014-representation\\_higher\\_education1.pdf](http://www.sikkuy.org.il/wp-content/uploads/2013/11/English_final-2014-representation_higher_education1.pdf)
- Al Jabery, M., & Zumberg, M. (2008). General and special education systems I Jordan: Present and future perspectives. *International Journal of Special Education*, 23, 115–122.
- Al Jalahma, A. (1999). *The technique of colored progressive matrices test on UAE*. Al Ain, United Arab Emirates: Ministry of Education.
- Aljughaiman, A. M., & Grigorenko, E. L. (2013). Growing up under pressure: The cultural and religious context of the Saudi system of gifted education. *Journal for the Education of the Gifted*, 36, 307–322.

- Al Khoori, A. (2015). Ministry of Education looks to prestigious university graduates to teach next generation. *TheNational*. Retrieved from <http://www.thenational.ae/uae/education/ministry-of-education-looks-to-prestigious-university-graduates-to-teach-next-generation>
- Al-Lawati, F. A. (2013). The status of gifted education in the Sultanate of Oman. In P. Sánchez-Escobedo (Ed.), *Talent development around the world* (pp. 29–37). Mérida, Mexico: Lap Lambert Academic.
- Al Nafie, A. (2001). *The Saudi experiment of talented discovery*. Riyadh, Saudi Arabia: King Abdulaziz City for Science and Technology.
- Al Nafie, A., Al Gateai, A., Al Dudiban, S., Al Hazmi, M., & Al Saleem, A. (2000). *Disclosure program for talented and caring*. Riyadh, Saudi Arabia: King Abdulaziz City for Science and Technology.
- Al Qarni, M. A. (2010). *Evaluation of provisions for gifted students in Saudi Arabia* (Doctoral dissertation). Retrieved from <http://ro.uow.edu.au/theses/3197>
- Al Qassemi, S. (2012, June 19). Infinite possibilities for Dubai-Sharjah-Ajman conurbation. *Gulf News Thinkers*. Retrieved from <http://gulfnews.com/opinion/thinkers/infinite-possibilities-for-dubai-sharjah-ajman-conurbation-1.1037372>
- Alsrour, N. (1996). The effectiveness of the master thinker program for teaching thinking in developing creativity skills among a sample of educational science college students in the University of Jordan. *Educational Research Center Journal*, 10(5), 65–101.
- Alsrour, N. H., & Al-Ali, S. (2014). An investigation of the differences in creativity of preschool children according to gender, age, and kindergarten type in Jordan. *Gifted and Talented International*, 29, 33–38. <http://dx.doi.org/10.1080/15332276.2014.11678427>
- Awamleh, H., Al Assaf, J. A. F., Borini, I. S., & Rahman, A. S. M. B. A. (2013). The intelligence's level of gifted and ordinary students in seventh and eighth grades, in accordance with the Raven's advanced matrices test in Irbid Governorate in relation to some variables (sex, mothers' qualification). *American International Journal of Contemporary Research*, 3(5), 26–36.
- Back to school in Lebanon with UNRWA, UNICEF, and EU. (2013). Retrieved from <http://www.unrwa.org/newsroom/press-releases/back-school-lebanon-unrwa-unicef-and-eu>
- Batterjee, A. A. (2013). The relationship between SES and giftedness in Saudi Arabia. *Mankind Quarterly*, 53(3), 3–52.
- Becker, K. A. (2003). History of the Stanford-Binet intelligence scales: Content and psychometrics. (Stanford-Binet Intelligence Scales, Fifth Edition Assessment Service Bulletin No. 1). Itasca, IL: Riverside Publishing.
- Burg, B. (1988). Programs for gifted children in Israel. *Gifted Education International*, 5, 110–113. <http://dx.doi.org/10.1177/026142948800500210>
- Chakroun, G., & Abu Safieh, L. (2012). Drawing for early identification of creative thinking of children in different cultures. *Journal of Educational and Instructional Studies in the World*, 2(3), 86–96.
- David, H. (2002). A minority within a minority: Mathematics, science and technology studies among Israeli and Arab female students. In L. Maxwell, L. Slavin, & K. Young (Eds.), *Proceedings of the gender and science conference, Brussels, 8–9 November, 2001* (pp. 248–255). Brussels, Belgium: The European Commission.
- David, H. (2008). Mathematical giftedness: The mathematics acceleration program at the Tel Aviv University. *Gifted Education Press*, 22(3), 4–9.
- David, H. (2009, Spring). Germans, Jews, the Nobel prize in science and medicine: Comment on Ziegler and Stöger, 2007. *Gifted Education Press*, 13–14.
- David, H. (2010). Teaching psychology in the Arab College in Israel. In A. İşman & Z. Kaya (Eds.), *International Conference on New Horizons in Education: Proceedings* (pp. 775–780). Nicosia, Cyprus: Sakarya University.
- David, H. (2011). Teachers' attitude: Its importance in nurturing and educating gifted children. *Gifted and Talented International*, 26, 65–80.
- David, H. (2012). Response to the letter of Shlomit Rachmel. *Gifted Education Press*, 26(4), 19–20.
- David, H. (2013). Does contemporary education for the gifted truly encourage them to fulfill their talents? In J. A. Opara (Ed.), *Book of Proceedings: IIC2013 International Interdisciplinary Conference on Education and Development, July 1-4, 2013* (pp. 267–295). Anambra State, Nigeria: Federal College of Education.
- David, H. (2014a). Are Christian Arabs the new Israeli Jews? Reflections on the educational level of Arab Christians in Israel. *International Letters of Social and Humanistic Studies*, 21(3), 175–187.
- David, H. (2014b). Diagnosis of the gifted in Israel. *Gifted Education International*, 30, 87–90.
- David, H. (2014c). *The gifted Arab child in Israel*. Saarbruecken, Germany: Lambert Academic.
- David, H. (2014d). Why is diagnosing the gifted in Israel so problematic? On the problems of diagnosing gifted children and the difficulties in deciphering such diagnoses. *Australasian Journal of Gifted Education*, 23, 49–58.
- David, H. (2015). The PISA results in mathematics and science: A comparison between Israel and Turkey. *Journal for the Education Gifted Young Scientists*, 3, 22–28.
- David, H. (2016). A glimpse into my clinic: The "Associations Game" as part of a dynamic diagnosis. *Torrance Journal of Applied Creativity*, 1, 174–179.

- David, H., Gil, M., & Raviv, I. (2009). Sibling relationships among Eilat families with at least one gifted child. *Gifted and Talented International*, 24(2), 71–88.
- David, H., & Wu, E. (2012). Gifted education in Hong Kong and Israel: Comparative study. *Australasian Journal Gifted Education*, 21(2), 81–89.
- Division of Gifted and Talented Students. (2015a). *Special classes in elementary schools*. Retrieved from <http://cms.education.gov.il/EducationCMS/Units/Gifted/amudim/ReshimatKitotIchudiyotYsodi.htm>
- Division of Gifted and Talented Students. (2015b). *Special classes in high schools*. Retrieved from <http://cms.education.gov.il/EducationCMS/Units/Gifted/amudim/ReshimatKitotIchudiyotChativaElyona.htm>
- Division of Gifted and Talented Students. (2015c). *Special classes in junior high schools* Retrieved from <http://cms.education.gov.il/EducationCMS/Units/Gifted/amudim/ReshimatKitotIchudiyotBeinaim.htm>
- Dracup, T. (2011a, May 24). Mawhiba: Gifted education in Saudi Arabia (part one) [Blog post]. Retrieved from <https://giftedphoenix.wordpress.com/2011/05/24/mawhiba-gifted-education-in-saudi-arabia-part-one>
- Dracup, T. (2011b, May 26). Mawhiba: Gifted education in Saudi Arabia (part two) [Blog post]. Retrieved from <https://giftedphoenix.wordpress.com/2011/05/26/mawhiba-gifted-education-in-saudi-arabia-part-two>
- Dwairy, M., & Van Sickle, T. D. (1996). Western psychotherapy in traditional Arabic societies. *Clinical Psychology Review*, 16, 231–249.
- Elhoweris, H. (2014). The effect of the label “giftedness” on United Arab Emirates pre-service teachers’ diagnosis decisions. *International Journal of Education and Research*, 2, 515–524.
- Elyan, F. (2012). *Identification of educational opportunities and concerns of gifted Arab Palestinian girls in East Jerusalem: A case study* (Unpublished doctoral dissertation). Universitatea Babeş-Bolyai, Cluj-Napoca, Romania.
- The first class for the gifted in the [Arab] sector. (2015). Retrieved from <http://www.newshaifakrayot.net/2015/05/03>
- Freeman, J. (2002). *Out-of-school educational provision for the gifted and talented around the world. A report for the Department of Education and Skills, Part one, London*. Retrieved from [http://www.joanfreeman.com/pdf/Text\\_part\\_one.pdf](http://www.joanfreeman.com/pdf/Text_part_one.pdf)
- Freeman, J., Raffan, J., & Warwick, I. (2010). *Worldwide provision to develop gifts and talents: An international survey* (Research report for Tower Education Group). Reading, England: CfBT.
- Ghamrawi, N. (2014). Multiple intelligences and ESL teaching and learning: An investigation in KG II classrooms in one private school in Beirut, Lebanon. *Journal of Advanced Academics*, 25, 25–46.
- Gibbs, R. (2009, May 8). White House press briefing. Retrieved from <https://www.whitehouse.gov/video/White-House-Press-Briefing-May-8-2009#transcript>
- Gifted Phoenix. (2011). Saudi Arabia–National research centre for giftedness and creativity (NRCGC) [Blog post]. Retrieved from <https://giftedphoenix.wordpress.com/directory-of-major-gifted-education-centres-worldwide/Saudi-arabia-national-research-centre-for-giftedness-and-creativity-nrcgc>
- Gökdere, M., Küçük, M., & Çepni, S. (December 2003). Gifted science education in Turkey: Gifted teachers’ selection, perspectives and needs. *Asia-Pacific Forum on Science Learning and Teaching*, 4(2), 1. Retrieved from [https://www.ied.edu.hk/apfsl/download/v4\\_issue2\\_files/gokdere.pdf](https://www.ied.edu.hk/apfsl/download/v4_issue2_files/gokdere.pdf)
- Hamdi, N., & Hamdi, N. (1989). School psychology in Jordan. In P. A. Saigh & T. Oakland (Eds.), *International perspectives on psychology in the schools* (pp. 125–132). Hillsdale, NJ: Routledge.
- Inati, S. C. (1999). Transformation of education: Will it lead to integration? *Arab Studies Quarterly*, 21, 55–68.
- Kashti, O. (2009). *The tests for identifying the gifted will be adapted to girls’ abilities*. Retrieved from <http://news.walla.co.il/item/1426379>
- Kazem, A. M., Alzubaidi, A. S., Alzubaidi, H. A., Alkharusi, H. Y., Alsarmi, A. M., Al-Bulushi, S. S., . . . Alshammary, B. M. (2009). A normative study of the raven coloured progressive matrices test for Omani children aged 5–11 years. *Jurnal Pendidikan Malaysia*, 34, 37–51.
- Kazem, A. M., Alzubaidi, A. S., Hemdan, A. H., & Renzulli, J. (2014). The factor structure of the scales for rating the behavioural characteristics of superior students (SRBCSS): Results on an Omani sample. *International Journal for Talent Development and Creativity*, 2, 127–136.
- Kingdom of Saudi Arabia, Ministry of Higher Education. (2006). *Directory of the doctoral dissertations of the Saudi graduates from American universities 1964–2005*. Fairfax, VA: Saudi Arabian Cultural Mission to the U.S. Retrieved from [http://www.sacm.org/Publications/56090\\_phd\\_complete.pdf](http://www.sacm.org/Publications/56090_phd_complete.pdf)
- Muammar, O. M. (2015). The differences between intellectually gifted and average students on a set of leadership competencies. *Gifted Education International*, 31, 142–153.
- Palmer, M. (2015). *CEE and the University of Dammam in Saudi Arabia inaugurate the research science initiative*

- 2015 for young females. McLean, VA: Center for Excellence in Education. Retrieved from <https://www.cee.org/news/cee-and-university-dammam-saudi-arabia-inaugurate-research-science-initiative-2015-young-female>
- Passow, A. H. (1995). Programs for the gifted, talented & very able. In M. G. Bard (Ed.), *Learning together: Israeli innovations in education that could benefit Americans*. Chevy Chase, MD: American Israeli Cooperative Enterprise. Retrieved from <https://www.jewishvirtuallibrary.org/jsource/Learning/three.html>
- Renzulli, J. S., Smith, L. H., White, A. J., Callahan, C. M., Hartman, R. K., & Westberg, K. L. (2002). *Scales for rating the behavioral characteristics of superior students* (rev. ed.). Mansfield Center, CT: Creative Learning Press.
- Sarouphim, K. M. (2009). The use of a performance assessment for identifying gifted Lebanese students: Is DISCOVER effective? *Journal for the Education of the Gifted*, 32, 276–296.
- Sarouphim, K. M. (2010). A Model for the education of gifted learners in Lebanon. *International Journal of Special Education*, 25, 71–79.
- Sarouphim, K. M. (2015). Slowly but surely: Small steps toward establishing gifted education programs in Lebanon. *Journal for the Education of the Gifted*, 38, 196–211.
- Shalhoub, L. (2007, May 30). Ministry Nod for Grade Skipping by Gifted Kids. *Arab News*. Retrieved from <http://www.arabnews.com/node/299013>
- Sultan Qaboos University. (2010). *Research at the Sultan Qaboos University, 1986–2009*. Muscat, Oman: Author. Retrieved from <https://www.squ.edu.om/Portals/65/Documents/Research%20at%20SQU%201986-2009.pdf>
- Szold Research Institute for Behavioral Sciences. (1989). *Identifying and nurturing giftedness: Articles and bibliography, 1976–1988*. Jerusalem, Israel: Author.
- Tawalbeh, K. (2014, January 30). Schooling for gifted children to be reduced to 6 years from 12. *Arab News*. Retrieved from <http://www.arabnews.com/news/517676>
- Thorndike, R. L., Hagen, E. P., & Sattler, J. M. (1986). *Stanford–Binet intelligence scale* (4th ed.). Itasca, IL: Riverside.
- Tischler, K., & Vialle, W. (2009). Gifted students' perceptions of the characteristics of effective teachers. In D. Wood (Ed.), *The gifted challenge: Challenging the gifted* (pp. 115–124). Merrylands, Australia: NSWAGTC.
- UNICEF. (2015). *At a glance: Oman*. Retrieved from [http://www.unicef.org/infobycountry/oman\\_statistics.html](http://www.unicef.org/infobycountry/oman_statistics.html)