DISCOVER Travels to Lebanon

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Abstract

The purpose of this study was to investigate the effectiveness of DISCOVER, a performance-based assessment, in identifying gifted students in Lebanon. DISCOVER is grounded in Gardner's MI theory and consists of tasks involving problem-solving and creative abilities. The sample consisted of 49 middle-class 5-th graders, with a mean age of 10.2 years attending a private school in Beirut, Lebanon. High correlations were found between the participants' DISCOVER ratings and their corresponding school grades in mathematical, spatial analytical and written linguistic intelligences. Discrepancies were found between students' grades and corresponding DISCOVER ratings in spatial artistic and oral linguistic intelligences. However, 19% of the participants were identified, with no gender differences. Findings were corroborated by interviews with the teachers. The researcher concludes the DISCOVER instrument holds promise for identifying gifted Lebanese children, but advises research on larger samples of Lebanese students should be conducted before drawing solid conclusions

Keywords: Identifying gifted students, multiple intelligences, performance-based assessment.

Introduction

Programs for gifted children living in Lebanon, one of the smallest Middle East countries (10,452 square kilometers) and similar in the size to the state of Connecticut in the United States, are virtually non-existent in public schools. Some private schools, mostly catering for students from high socio-economical status and located in the capital, Beirut, have established what are similar to enrichment programs for high-achieving students. However, these pull-out activities remain rudimentary while not being grounded on a solid theoretical foundation. Such programs represent attempts to nurture the talent and ability of students with high grade-point averages through a variety of enhancement activities which are carried sporadically to higher levels than that found in the regular curriculum.

The reason for a paucity of gifted programs in Lebanon is due, to a large extent, to the lack of reliable and valid instruments for the identification of gifted students. Currently, measures to assess intelligence standardized on samples of Lebanese students are not available. The only tests used for this purpose are imported from the West and translated into Arabic, the native language of the Lebanese. Thus, these measures yield, at best, a rough estimate of the students' true ability, a process heaped with dangerous consequences. Hence, a great need exists for appropriate measures to facilitate identification of Lebanese gifted students and establish programs for the gifted grounded in well-established theories.

The purpose of this study is to investigate the effectiveness of using the performance-based assessment, DISCOVER, to identify gifted Lebanese students in one private elementary school in Lebanon. Use of performance-based assessments (also called alternative and authentic) has increased in the last two decades, especially with the rise of Gardner's (1983) theory of multiple intelligences (MI). Advocates of such instruments cite many advantages to their use, e.g., assessing students in lifelike situations, reduction of the gap between testing and instruction, and consideration of both process and product (Frechtling, 1991; Maker, 1993). One advantage particularly pertinent to this study is how performance-based assessments may be used effectively with a wide variety of students from different cultural groups. Based on this supposition, the researcher has chosen to investigate the usefulness of the alternative assessment DISCOVER with the Lebanese students. The goal is ultimately to introduce gifted education into Lebanese schools, starting with an effective instrument for identification and leading to the establishment of viable programs for the gifted grounded in Gardner's theory (1983).

Research on DISCOVER

DISCOVER is grounded in Gardner's (1983) MI theory and based on Maker's (1993) definition of giftedness "the ability to solve the most

complex problems in the most efficient, effective, or economical ways" (p. 71). DISCOVER is an acronym which stands for <u>D</u>iscovering <u>I</u>ntellectual <u>S</u>trength and <u>C</u>apabilities while allowing for <u>V</u>aried <u>E</u>thnic <u>R</u>esponses. The instrument was developed to identify gifted students from culturally diverse groups, hence the reason for choosing it for this study. Since its inception, DISCOVER has been administered to large numbers of students in the United States, in addition to diverse student populations residing in countries such as China, Taiwan, Australia, England, and Bahrain. The collected data have served as the basis for research on the reliability and validity of the instrument.

Inter-Rater Reliability.

In a triangulated inquiry on the inter-rater reliability of DISCOVER, Sarouphim (1999a) investigated the alignment of ratings given to students by three independent raters: DISCOVER observers, classroom teacher, and the researcher.

Using DISCOVER, students' linguistic, mathematical, and spatial intelligences are assessed through specific group activities consisting of discrete tasks. On the other hand, personal and kinesthetic intelligences are evaluated by observing unstructured behaviors while students are engaged in group activities. Such behaviors might include helping others and demonstrating leadership skill - behavior that would rate highly on interpersonal intelligence; making remarks about themselves that are pertinent and correspond to their performance - rating highly on intrapersonal intelligence; or demonstrating hands-on capabilities in art or construction projects or a sustained ability to move gracefully - behavior rating highly on kinesthetic intelligence.

Results from this study indicated DISCOVER observers, the classroom teacher, and this researcher ascribed similar ratings to students in the linguistic, spatial, and mathematical intelligences. Ratings were not so similar, however, in the personal and bodily-kinesthetic intelligences. The author concluded that observation of specific activities facilitates more effective appraisals of a student's intelligence than the observation of unstructured behavior. On this premise, the researcher recommended specific activities be developed for an accurate appraisal through DISCOVER of the whole spectrum of multiple intelligences.

In another study on DISCOVER inter-rating reliability, Giffiths (1996) compared the ratings observers gave to students on the spatial activities and those marked by independent raters who watched videotapes of the recorded administration. The results showed high inter-rater agreement, ranging from 80% to 100% with the highest agreement found between the observers and independent raters with the most expertise in the administration of DISCOVER.

Fit Between DISCOVER and MI Theory.

Sarouphim (2000) investigated the alignment of DISCOVER with the theory of multiple intelligences through a series of inter-observer correlations. The sample consisted of 254 (N=254) elementary students, predominantly from economically disadvantaged Native American and Hispanic groups. All participants were administered either the K-2 or the 3-5 version of DISCOVER, depending on their grade level.

Analysis of data indicated low inter-observer correlations across grade levels between activities measuring different intelligences (e.g., linguistic and spatial activities) and moderate to high correlations between activities measuring interrelated intelligences (e.g., oral linguistic and written linguistic). In turn, this indicated students identified as gifted in one intelligence were not necessarily identified as gifted in other intelligences. The results suggested that the different DISCOVER activities with discrete cognitive tasks may measure different intelligences, a finding which might provide support to the consistency between DISCOVER and Gardner's MI theory.

Concurrent Validity.

In another study, Sarouphim (2001) examined the concurrent validity of DISCOVER with the Raven's Progressive Matrices. The study also examined gender differences in identification rates and the percentage of minority students identified by DISCOVER, in comparison to students identified through traditional standardized tests. The results, based on a sample of Native American and Hispanic students, showed a high correlation between the students' scores on the Raven's and their ratings in the spatial activities of DISCOVER, and low correlations between the students' Raven scores and their ratings in the linguistic activities of DISCOVER, providing evidence for the convergent and discriminant validity of DISCOVER. The results also showed that through the use of the DISCOVER assessment, 22.9% of the students were identified. In addition, no significant gender differences were found in identification, possibly indicating that the assessment is mostly fair and does not discriminate against males, females, or ethnicity.

Gender and Ethnic Differences.

In a study conducted on the validity of DISCOVER, Sarouphim (2002) investigated the effectiveness of the 9-12 version of the assessment. The sample consisted of 303 predominantly Hispanic and Native American ninth graders. The results provided evidence for an alignment of the assessment with MI theory. Also, no overall gender or ethnic differences were found in identification. In addition, the results suggested that use of DISCOVER might help reduce the problematic under-representation of minority students in programs for the gifted as 29.3% of the participating high school students were identified as gifted.

In another study, similar in purpose, Sarouphim (2005) examined the effectiveness of DISCOVER on a large sample of students taken from grades K-12 from 10 schools in Arizona, USA. The results showed low observers' inter-rating correlations, indicating that students given high ratings in activities measuring one particular intelligence were not necessarily given similarly high ratings in activities measuring different intelligences. A good fit between DISCOVER and MI theory is suggested. Another finding is a lack of significant ethnic and gender differences in identification. Finally, a total of 20.9% participants were identified, indicating, once more, that DISCOVER might help diminish the problem of having diverse students under-represented in programs for the gifted.

In sum, for the most part, existing research on DISCOVER has yielded positive results with respect to its effectiveness in identifying students from culturally diverse groups. However, data used in these studies were only collected in the United States. The significance of this study, therefore, is that light will be shed on the effectiveness of DISCOVER in identifying gifted students in another country, Lebanon.

Identification of Gifted Students

Many concerns have been raised over the past years salient to the identification of gifted students. One concern frequently appearing in the literature is the issue of validity of the instruments used and fairness in identification (Ford & Whiting, 2006; Maker, 1993; Ortiz, 2002; Whiting & Ford, 2006). Both issues are interrelated given fair assessment involves use of valid instruments and vice-versa.

At the core of fair assessment is what has been referred to as "nondiscriminatory assessment" (Ford & Whiting, 2006, p.2). Ortiz (2002) developed a set of guidelines to prevent any such discrimination.

These include:

- Conduct assessment in the native or primary language of the student;

- Allow bilingual administration of the test;

- Eliminate time constraints;

- Accept more than one response format;

- Use alternative assessment procedures, e.g., performance and, or curriculum-based assessments; and

- Consider cultural factors that might hinder performance.

In other words, non-discriminatory assessment is a "culturally competent assessment" (Ford & Whiting, p. 4), which goes beyond assessment and evaluation of student performance via traditional standardized tests by encompassing a student's entire learning environment (Ford & Whiting, 2006) and use of culture-bias free assessment tools (Maker, 1993; Sarouphim, 2005). Theoretical underpinnings of DISCOVER, in addition to empirical research, supports its non-discriminatory characteristics. Since Lebanon presently lacks instruments for the identification of gifted students, any assessment instrument introduced to this country for this purpose must be effective and must not discriminate against gender or cultural groups.

In 1999, the American Educational Research Association (AERA) with the collaboration of the American Psychological Association (APA) and the National Council on Measurement in Education (NCME) established principles for psychological and educational assessment practices. The first principle cautions against the rigid interpretation of intelligence test scores, contending that intelligence is a multifaceted construct that cannot be captured by a single test score. Another principle draws attention to the factors that might depress test scores, such as cultural and language biases. A third principle calls for making accommodations and modifications, where appropriate for valid and reliable results. In sum, the gist of the principles (not all mentioned here) revolves around the importance of adopting appropriate measures, but also draws attention to the need for considering extraneous factors unrelated to the student's ability which might play a role in the student's performance, hence yielding a score which does not reflect accurately the student's true ability.

In Lebanon, the fields of gifted education and assessment are at their first stages of inception. A definition of giftedness still needs to be established and acknowledged by the Ministry of

Education for developing appropriate programs and adopting valid identification instruments. Riley (2005) contended that "identification should have as its ultimate goal the collection of a wide range of information about a gifted and talented student's learning interests, qualities, abilities, strengths and weaknesses to be used in the formation and implementation of a differentiated educational program" (p. 43). Of utmost importance here is acknowledging the need for multiple data sources in identification and the use of global assessment measures rather than single tests for identification purposes. Thus, a need exists in Lebanon for adopting at first a clearly defined concept of giftedness followed by a thorough screening of the assessments to be used for identification to ensure their effectiveness, validity and fairness to all Lebanese students, before the market is flooded with all sorts of imported instruments that might do more harm than good in gifted education. In this pilot study, an attempt is made to investigate the effectiveness of using an authentic assessment, DISCOVER, as one possible source among other data sources for collecting information on the strengths of Lebanese students and the identification of those among them who are gifted.

Method

Participants

The sample of this pilot study consisted of 49 students taken from two 5th grade sections of a private school in Beirut, Lebanon. The participants were predominantly from mid-level SES, as evidenced by their place of residence and parents' occupation. Around half of the sample were boys (n=25) and the participants' mean age was 10.2 years.

Procedures

All participants were given the 3-5 version of the DISCOVER assessment. The researcher as well as the two graduate students who administered the assessment were all trained in the use of DISCOVER. The administration took place over two consecutive days (Phases I and II) in the spring of 2006. Data were also collected through interviews with the classroom teachers who provided data on the participants' academic performance and made the students' grade records available to the researcher.

One of the distinctive features of DISCOVER is that instructions must be given in the dominant language of the child. Thus, in this pilot study, instructions were given in Arabic, the native language of the participants. At first, instructions were read in English, as the teachers assured the researcher that all the students were fluent in English, however, to be true to DISCOVER specifications, and for validity purposes, the instructions were also repeated in Arabic.

As mentioned, data on the academic performance of participants were also collected through examining grade reports and interviewing the classroom teachers. These data served as a basis for comparing the students' academic performance with their performance on the DISCOVER tasks.

Instrument

The DISCOVER assessment is performance-based (manipulatives) and the tasks typically require problem-solving behaviors that increase progressively in complexity and openness (Maker, Nielson, & Rogers, 1994). Basically, three activities are performed in class during Phase I of the administration to assess spatial artistic, spatial analytical and oral linguistic intelligences. Phase II of the administration is carried one or two days following Phase I and consists of two activities used to appraise mathematical and written linguistic intelligences.

The DISCOVER assessment measures the different intelligences by using separate activities across intelligences and age levels. Different tasks are designed for grade levels from kindergarten all the way through to twelfth grade. Typically, the DISCOVER assessment takes place in the classroom. Trained observers gather around the children with an approximate ratio of 1:5 (one observer to five children). Each observer takes notes and records all behaviors observed on standard observation sheets (the observer's notes) while the classroom teacher gives instructions in the dominant language of the children.

Observers pay attention to the process of problem-solving that children adopt as well as to their products. To avoid observer bias, observers rotate at the completion of each activity; thus each child is observed by at least two persons during the assessment. Observers are instructed to accept all products and to adopt a non-judgmental attitude throughout the assessment (Maker, 1992). The length of a typical complete observation is approximately two and a half to three hours.

Following the administration, all observers meet to discuss the students' strengths and complete a behavior checklist on each child. As the name pertains, checklists include statements on behaviors; observers check only those behaviors that they have seen the child exhibit during the assessment.

Observers classify children's strengths in each activity into four different categories ranging from "no strength observed" to a "definite strength observed". The categories are: *Unknown, Maybe, Probably,* and *Definitely*.

The category "Definitely" corresponds to a high ability or in other words, to giftedness in that particular intelligence assessed by that particular activity. A child assigned a "Definitely" rating in at least two of the activities is identified as gifted.

Activities and Tasks

The DISCOVER assessment uses a set of different activities to assess each intelligence (Maker, 1992; Sarouphim, 1999b). Within each activity, students are required to perform certain tasks that increase in difficulty and openness, all requiring problem-solving skills of different levels.

Spatial Artistic.

The first series of problems presented to the children is spatial artistic. The material used consists of colored cardboard pieces of different shapes, designs, and size. Tasks differ according to grade levels. In grades 3-5, children are first asked to play with the material to familiarize themselves with it, then the observer holds a picture of a design and the children are instructed to reproduce it using the card board pieces. Constructions of different geometrical shapes, flowers, and a free construction of the students' choice follow. Observers note the complexity of the construction, the extent to which it resembles the design the child is attempting to make, symmetry, the number of pieces used, uniqueness of the constructions, and whether the constructions are two or three-dimensional.

Spatial Analytical.

Each child is given a set of Chinese tangrams (21 pieces of three different shapes: triangles of three different sizes, squares and parallelograms). Children are given a short time to explore the material and play with it, after which they are requested to make the geometrical shape of a triangle, using as many tangram pieces as possible. Observers note the shape as well as the number of pieces used. Next, students are given

a booklet of six worksheet puzzles arranged from simple to complex and are instructed to use their tangram pieces to make the shapes on the worksheets. If a student completes all six pages of the puzzle booklet, he or she is given a seventh page called the "challenge sheet" which is higher in difficulty than the puzzle booklet. Observers record the order in which each child in the group completes each worksheet and the amount of time taken on each. They also note, among others, making puzzles in different ways, choosing pieces that fit without physically turning them, taking apart a puzzle to try a different set of pieces, persistence, and enjoyment of task.

Oral and Written Linguistic.

In the oral linguistic activity, children are given an assortment of toys that consist of two small people, two animals, a vehicle, and two furniture pieces, and are asked to list as many descriptors of the single item and multiple items as possible. Observers record the items in each group and children's reasons for putting them together. Children are then asked to tell a story involving the toys they were given. Observers either record the stories verbatim or tape record them according to each child's preference. They note the originality of grouping and reasons given, abstractness, and grouping on the basis of multiple attributes ("they have legs, they like each other", etc.). For stories, observers note whether they have a beginning, middle and end, a plot, the quality of words used, dialogues, uniqueness of ideas, and appropriateness in the sequence of events.

The written linguistic activity is carried out in the classroom during Phase II of the administration. In this activity, the teacher asks the students to write a story on a subject of their choice. The teacher collects the written samples and sends them back to the DISCOVER office. Written stories are evaluated by two members of the DISCOVER team separately, and here too, students are classified in one of the four categories mentioned above: Unknown, Maybe, Probably and Definitely. Evaluators look for originality of products, complex ideas and cause-effect relationships and do not penalize the students for spelling or grammar errors.

Logical-Mathematical.

Worksheets are used in this activity which is administered in Phase II of the assessment. Students are asked to complete the assigned math worksheets individually. The worksheet consists of a series of problems that increase

in difficulty. At first, students are presented with a set of simple operation problems. Then they work on completing magical squares. The third task consists of asking the students to perform addition and subtraction operations using only pre-specified numbers, and finally, students are instructed to write as many problems as they can that have the number 18 for answer. Observers note the number of correct problems as well as the use of different strategies, commutative properties, and use of more than one operation to solve the same problem.

Interpersonal, Intrapersonal, and Bodily-Kinesthetic.

Although specific activities in DISCOVER were not developed to assess these intelligences, behaviors that pertain to them are noted while students are engaged in small-group activities performed in class during Phase I of the administration. Observers look for behaviors that indicate strengths in these areas such as quality of interaction, cooperative or competitive behaviors, self-oriented expressions, leadership ability and graciousness in gross or fine bodily movements.

Results

Quantitative and qualitative data analyses were carried out for attaining the results. At first, the participants' school grades were correlated with their corresponding DISCOVER ratings. Thus, the students' school grades in art, geometry, math, reading comprehension, and composition writing were correlated with their DISCOVER ratings in activities that measure spatial artistic, spatial analytical, logical-mathematical, and oral and written linguistic intelligences, respectively.

The DISCOVER ratings were coded as follows: Unknown = 1, Maybe = 2, Probably = 3, and Definitely = 4.

As shown in Table I (below), the results showed mostly an alignment between the participants' school grades and their DISCOVER ratings. The highest correlation was found between the participants' rating in linguistic intelligence and their composition writing grades, r = .861, p < .01, followed by the correlation between ratings in logical-mathematical intelligence and Math achievement scores, r = .767, p < .01. The correlation between the students' geometry grades and their ratings in the spatial analytical activity was also high and significant, r = .551, p < .05.

The highest discrepancy was found between the participants' grades in reading comprehension and their DISCOVER ratings on the oral linguistic activity, r = .235, p < .48, ns, followed by the correlation between students' grades in Art and their ratings in the artistic activity which also was low and non significant, r = .221, p > .51, ns. Data analysis of the transcribed interviews showed that the findings were also corroborated by the teachers who agreed with some but not all of the students' DISCOVER ratings. As the English teacher said:

"The DISCOVER ratings given to students reflected pretty much the students' ability in writing. Students who were given low ratings are those who have shown consistently a weakness in composition writing. Those who were given high ratings have mostly good grades in this subject-matter... So, yes, the DISCOVER observers seem to be more or less correct in their assessment. However, I did not agree with the ratings given to students in the oral linguistic intelligence....Maybe the problem is comparing students' performance in reading to their oral linguistic ability. The two don't fit together."

Table 1: Correlation between students' DISCOVER ratings and their corresponding school grades.

DISCOVER Activity	Corresponding Subject-Matter	Pearson R Index Value
Spatial artistic	Art	.221
Spatial analytical	Geometry	.551*
Logical-mathematical	Math	.767**
Oral linguistic	Reading comprehension	.241
Written linguistic	Composition writing	.861**

*Note. *p < 0.05. **p < 0.01*

Table 2: Gifted participants by gender.

	Gifted	Not Identified	All
Boys	4	21	25
Girls	4	20	24
All	8 (19%)	41	49

Along the same line, the art teacher disagreed with the spatial artistic ratings, especially the low ratings. As he said:

"The spatial artistic activity of DISCOVER failed to capture the strengths of students with high ability in art... One student for example, whom I consider the next Da Vinci was given the rating of "Maybe" in DISCOVER; another student who has shown high creative ability in my class was given the rating of "Unknown". I don't agree with the ratings that were given to these students. I know

that their spatial artistic ability is much higher than what was captured in DISCOVER. You cannot take an assessment that was developed in the United States and apply in Lebanon. It's just not fair."

Another finding is that all of the participants who were given two Definitely ratings, thus identified as gifted according to the criteria used in DISCOVER had a high grade-point average ranging between 3.7 and 4.0. An equal number of boys and girls were identified. Also, 19% of the participants in the total sample were identified (see Table 2, above).

Discussion

The results of this pilot study showed a corroboration between the students' ratings in DISCOVER and their school performance in spatial analytical, mathematical, and written linguistic intelligences. However, discrepancies were found between the students' DISCOVER ratings and their school achievement in spatial artistic and oral linguistic intelligences. Thus, DISCOVER was effective in capturing some, but not all, strengths in Lebanese students.

In other words, the results of this study showed that the use of DISCOVER for identifying gifted Lebanese students yielded mixed results. One explanation for the discrepancies found between the student's oral linguistic performance in DISCOVER and their school grades in reading comprehension might be in the choice of the subject-matter used as the basis for comparison. Perhaps the performance of students in reading comprehension does not relate well to students' oral linguistic intelligence, as assessed in DISCOVER. This activity in DISCOVER appraises students' oral creative strength, namely the ability to come up with a story inspired by a set of toys. Therefore, a better comparison would be between DISCOVER's oral linguistic activity and a subject-matter more compatible with this activity, which does not exist at present in the Lebanese curriculum. Perhaps a better means of assessing Lebanese students' oral linguistic intelligence would be by possibly modifying the tasks

required in the DISCOVER activity to make them more compatible with the Lebanese curriculum. Modification of an assessment is a delicate task that must be performed carefully without compromising the validity of the instrument. However, as mentioned in the principles for assessment practices established by AERA, APA, and NCME (1999), modification of an instrument is at times necessary and contributes to an increase rather than a decrease in its validity. Nonetheless, if changes are to be made in DISCOVER for adapting the instrument to the Lebanese population of students, care must be taken to investigate the issue thoroughly before implementing any modification, no matter how small or seemingly insignificant it might appear.

Another explanation for the discrepancy found in this result might be in the specific toys used in the oral linguistic DISCOVER activity, mostly toys that relate to Western cultures. Perhaps the choice of toys used could be more culture-specific in order to trigger stories in students' minds. Even though this explanation cannot be ignored, it might not hold since Lebanese students are constantly exposed to Western symbols through the visual and written media, i.e., TV shows, children's books, and the like. A surprising finding is the discrepancy found between the students' performance in the spatial artistic activity of DISCOVER and their school performance in art. Again, Lebanese children are familiar with manipulatives that they use to make

constructions. However, perhaps the specific material used in this activity is unfamiliar to the Lebanese students. In fact, the researcher was unable to find these particular cardboard pieces used in DISCOVER on the Lebanese market. But here again, the explanation might be far-fetched even though it cannot be ruled out entirely since the tasks of the activity, e.g., using the card board pieces to make the shape of a flower, are not alien to 5th graders in Lebanon.

An interesting finding is the equal number of boys and girls identified, indicating the absence of gender differences in identification through the use of DISCOVER. This finding is compatible with previous studies conducted on DISCOVER using data collected in the United States (Sarouphim 2001, 2002, 2005). However, given the small sample size of this study, claiming that DISCOVER is gender fair is premature, as further research on larger samples of Lebanese students is needed.

The conclusion that could be drawn from these findings is that further research on the use of DISCOVER in Lebanon is needed before one can draw solid inferences on the effectiveness of its use in Lebanon. One major limitation of this study is its small sample size, but one has to bear in mind that the purpose of this study was to get a first feel of how DISCOVER might fare with the Lebanese students, hence the reason it was conducted on such a narrow level. Studies on a larger scale, incorporating larger samples of Lebanese students from all grade levels, using age-appropriate versions of DISCOVER need to be conducted in Lebanese schools. Also, further inquiry into the material used in DISCOVER is needed through interviewing both the Lebanese students and their teachers about the appropriateness of the material used and the tasks required in the spatial artistic activity of DISCOVER.

On the other hand, the use of DISCOVER for capturing Lebanese students' strengths in intelligences drawn upon at school was highly effective. The high correlations found between the students' DISCOVER ratings in spatial analytical, logical-mathematical, and written intelligences and the students' corresponding school grades showed that DISCOVER was effective in revealing Lebanese students' strengths in these intelligences. The researcher concluded that DISCOVER seems to be a promising instrument which could be used to identify gifted Lebanese children in the intelligences nurtured in the Lebanese curriculum.

However, the use of DISCOVER should be accompanied by the development of a program for the gifted that enhances the abilities appraised in DISCOVER. Also, identifying gifted Lebanese students should not be based solely on the use of DISCOVER; rather this instrument could constitute the basis for further assessment and investigation of the students' strengths. Other data sources must be considered as well, such as parents' and teachers' nominations as well as portfolios and outstanding academic achievement in one or several areas. As Riley (2005, p.43) put it: "[Schools] must adopt...a clearly defined multicategorical concept of giftedness" and use multiple methods of identification embedded in the cultural context to ensure that all students, including students from diverse populations will be given a fair chance in identification and consequently, in being placed in programs for the gifted.

Implications for Practice and Future Research

The field of gifted education is still in its first stages of inception in Lebanon. To establish a solid program for gifted education, the country needs a conceptual framework in which a clear definition of giftedness is embedded, as well as the adoption of valid instruments for identification. In this study, the effectiveness of a performance-based assessment, DISCOVER, for the identification of gifted Lebanese students was investigated. The results could constitute the basis for further research on how to capture faithfully the abilities of Lebanese students and tap into the different dimensions of their intelligence. As such, programs for the gifted could be established in Lebanese schools to nurture talented students' strengths. Furthermore, this study draws attention to the gaps found in the Lebanese system of education with regard to gifted education. Investigating the effectiveness of instruments for identification grounded in theories that conceive of intelligence as multidimensional such as Gardner's (1983) MI theory could constitute a good start to move practitioners and researchers towards paying more attention to a much neglected field in Lebanon, the field of gifted education.

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