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Multiple Intelligences as a Mean of Giftedness Identification: A Reflection on the Saudi System

Khaled Farhan Alsarrah
Universiti Sains Malaysia.

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ABSTRACT
This paper provides an overview of the literature that involves the gifted education. It started with exploring the theories of intelligence, as some consider it as a basic characteristic of giftedness. Afterwards, the most fundamental theories of giftedness have been explored in depth. This was followed by the characteristics of gifted students, in order to clarify how their giftedness is manifested through their behaviour. The following section focused on the methods that are being used to identify gifted students. Particularly, the researcher advocates multiple intelligences theory as a mean of identification. The researcher, then, discusses the premises, with a special attention to the Saudi educational system, of the current paper and forward suggestions for future research.

Introduction

There is no universally accepted definition of giftedness and it is difficult to find agreement between authors, writers and others who are involved in gifted education. Views also range from those who believe that gifted pupils are simply exceptionally intelligent and can take care of themselves to those who passionately argue that these children need special attention. Reaching an agreement is a challenge because of the complexity of defining a concept which is beset with conflicting theories and viewpoints around the world. Van Tassel-Baska (1998) points out that the twentieth century has seen the greatest developments in the field of gifted education:

The issue of taking an interest in gifted people is an old one, as for centuries philosophers tried to present various explanations, most of which relate to supernormal and outstanding capabilities, magic or inspiration (Programme of Identification and Care for Gifted Students (p.11).

In the past, the term „genius" was widely used to describe gifted children and this term is still used in the media. The modern term „giftedness" was first used in 1869 by Galton in his scientific activities towards understanding giftedness (Van Tassel-Baska, 2001). Much of the literature on gifted education has its origin in the USA. The idea that a high Intelligent Quotient (IQ) equated giftedness dominated for several decades. IQ is still used as a measure in many countries. Important landmark studies include those of Terman and his associates (1925, 1926, 1947, and 1959), whose longitudinal studies provided information about highly gifted people. This research which is to encompass the entire lives of the original group of 1528 gifted youths with Intelligent Quotients (IQs) above 140 will continue until 2020. Terman and his co-researchers pioneered the field, but it is interesting to note that, while other factors such as age and achievement were considered, the definition of giftedness relied heavily on testing for high IQ levels. The broad field that giftedness has become had, at its roots, a narrow definition and middle - to upper - class aspirations (Cornell, 1984). Furthermore, in the 1940s, as Sternberg (2004) points out, intelligence tests were the main criterion used to identify the gifted and that many people still rely heavily on IQ or IQ related tests for the purpose of defining gifted students.

We can trace back efforts on trying to make sense of the concept of intelligence to the early 1800s, to the work of Sir Francis Galton (1822-1911). Galton attributed the differences in people's intelligence to aspects of heredity and raised the question of what influence heredity had on human abilities. According to Sternberg (1994), Charles Spearman, a psychologist in Britain who was influenced by Galton's work and a psychometrician, discovered the – general factor – as a measure of ability. During the 1890s, French researchers Alfred Binet and Theodore Simon were charged by the government to devise methods of assessment of children's abilities. Based on characteristics such as memory, reasoning and comprehension, the researchers designed tests to assess performance, known as Binet-Simon intelligence tests. In the USA, Lewis Terman, who was engaged in studying abilities of students, modified the Binet-Simon tests and launched the Stanford-Binet Intelligence Scale (Terman, 1916). Terman defined intelligence as the top 1% in general intellectual ability. These Intelligence tests became popular in the USA and other countries and have been used for educational purposes since their conception for the assessment of abilities and to plan provision.

There are numerous other terms synonymous with the word „gifted" that have been used in the literature. Amongst those are „precocious", „of high ability", „creative", „accelerated" and „talented (Silverman, 1982). In her international review of literature, Freeman (1998: 1) uses the phrase „very able" and the term „gifted" which she describes as „that troublesome word with its implications of gifted bestowed intact from on high". She also states that many other modified terms such as „moderately gifted", „very gifted" highly gifted", „profoundly gifted", „seriously gifted" and „average gifted" are being used, pointing to the complexity of the terminology and definitions relating to the concept of giftedness.

The Intelligence related perspective of giftedness is still in use in many countries and the level of giftedness is differentiated by some. A person with an IQ of 130 or above is classified as „gifted". For example, in Australia Gross (2000) classifies intellectually gifted students as mildly, moderately, highly, exceptionally and profoundly gifted, according to their Intelligence Quotient (IQ) scores. Levels of intellectual giftedness, as defined by IQ ranges, and the level of prevalence of such children in the general population, appear in summary form in Table 2.1 (Gross, 2000).

Background

The single dimensional conception of giftedness has led to much criticism over the years. For example, according to Sternberg and Grigorenko (2002) intelligence is not a fixed entity, but a flexible and dynamic one; it is a form of „developing expertise" which is an ongoing process of the acquisition and consolidation of a set of skills needed for a high level of mastery in one or more domains. Renzulli (2005) endorses the concept of developing expertise and states that intelligence is only one of the six forces that generate creative thought and behaviour. It is the confluence of intelligence, knowledge, thinking styles, personality, motivation and the environment that forms gifted behaviour as viewed from a creative productive perspective.

Renzulli (2005) maintains that

Intelligence is not a unitary concept but rather, there are many kinds of intelligence and therefore single definitions cannot be used to explain this complicated concept (p.251).

Gardner (1983), through his seminal work, added to the debate on the concept of a single dimensional view of intelligence when he formulated the theory that human beings possess seven types of intelligences (he added more in later years).

Reflecting the changing views of ability and moving away from the single dimensional view of giftedness, the advisory committee led by Marland in the USA, (1972) suggested that it can be assumed that utilization of a set of criteria for the identification of gifted and talented will encompass a minimum of 3 to 5 per cent of the school population. It was suggested that evidence of gifted and talented abilities may be determined by a multiplicity of ways which should include both objective measures and professional evaluation measures. Professionally qualified persons to make assessments were to include teachers, administrators, school psychologists, counsellors, curriculum specialists, artists, musicians and others with special training in assessing pupils" competencies. A commissioned committee which investigated the education opportunities necessary to nurture, guide and challenge the abilities and talents of young people had this to say:

Gifted and talented children are those identified by professionally qualified persons who by virtue of outstanding abilities are capable of high performance. There are children who require differentiated educational programs and services beyond those normally provided by the regular school program in order to realise their contributions to self and society (Marland, 1972, p2).

They put forward a new definition for gifted children which also introduced the word talent

Many talented children under-achieve, performing far less than their intellectual potential might suggest. We are increasingly being stripped of the comfortable notion that a bright mind will make its own way. On the contrary, intellectual and creative talent cannot survive educational neglect and apathy (Marland, 1972, p9).

The different terms – giftedness and talent – have gradually come into use to describe highly able children, although they seem to be used interchangeably. Gagne (1985) made a distinction between the two words and explained that giftedness refers to domains of human abilities and talents to domains of human accomplishments.

In 1970, the Congress of the United States, in a study focusing on providing education opportunities for gifted and talented children, set up an advisory committee (led by Marland), which put forward the following definition of gifted and talented students. The Marland report states: „children capable of high performance include those with demonstrated achievement and/or potential in any of the following areas, singly or in combination:

1. General intellectual ability.
2. Specific academic aptitude.
3. Creative or productive thinking.
4. Leadership ability.
5. Visual and performing arts.
6. Psychomotor ability.

It is to be noted that the last – psychomotor ability – was eliminated from the definition soon after. The Marland report marked a shift from the single dimension definition of giftedness in the USA. Renzulli (1978) was among those who proposed a liberal definition of giftedness which departed from the narrow, single-dimensional IQ-based view. This was welcomed world-wide and has been the subject of much discussion throughout the 1980s. Renzulli proposed that giftedness is an interaction of three basic clusters of human traits:

- above-average general abilities
- high levels of task commitment
- high levels of creativity.

This definition can be seen as a broader and less rigid one and Borland (2005) believes that on the basis of Renzulli"s concept of giftedness more people could be identified as gifted.

In the United Kingdom where development of gifted education has been slow, the first recorded acceptance of gifted children (who were referred to as „very able children") in schools can be seen in the report 'The Education of Very Able Children in Maintained Schools' (Her Majesty"s Inspectorate, 1992) which put forward a number of identifying traits that characterise such children. This report, which also provided a broadened conception of giftedness, describes gifted children as those who demonstrate high general intellectual ability, creative or productive thinking, a specific aptitude in one or more subjects, ability in creative or performing arts and psychomotor ability and leadership qualities.

It appears that the classic definition of giftedness as intelligence based on a single measure has been fading in favour of a broader view of multiple talents and abilities (VanTassel-Baska, 1998). The term „creativity" also finds a place in the later definitions of giftedness. In Queensland (Australia), the 1993 Education Department policy adopted the following definition: „Gifted children are those who excel, or have the potential to excel, in any general or specific ability area" (Gross, 2000). This definition, though brief, also reflects a broader conception of giftedness and includes many of the ideas from the previous definitions of giftedness.

Although there have been many attempts by voluntary organisations to bring gifted education to the fore-front, it is only in 1999 that the UK government launched a policy initiative relating to gifted and talented education. The UK government definition of the phrase „Gifted and Talented" (DfES, 2006)

clusters the two terms – „gifted‟ and „talented‟ - together with the explanation: **Gifted** describes learners who have the ability to excel academically in one or more subjects such as English, drama, technology. **Talented** describes learners who have the ability to excel in practical skills such as sport, leadership, artistic performance, or in an applied skill‟.

The existence of domain-specific intelligences (Gardner, 1983; 1991; VanTassel-Baska, 1998), has also been proposed in the past few decades. In VanTassel-Baska‟s (2005) conception of giftedness, giftedness becomes the manifestation of intelligence within specific domains at very high levels and conceptions that focus on domain-specific considerations hold the most promise for promoting talent development in individuals at all stages of development because of the capacity to make appropriate correspondence between aptitudes and interventions and between predispositions and interests. The view that ability is multi-dimensional and the fact that individuals vary considerably in their ability to function effectively in various domains adds support to this view. VanTassel-Baska maintains that consideration must be given to the „rubber band effect‟ of human potential and that the key is to provide the best opportunities to stretch an individual‟s potential flexibly in areas of best flexibility for learning. Koshy and Casey (1997) propose that for the purpose of making appropriate provision for gifted children, it is useful to view ability as a continuum as illustrated below. The authors defend this view by acknowledging the complexity of identification. They urge teachers to focus on provision rather than labeling children as gifted and non-gifted; through effective differentiated provision, children would demonstrate their particular gifts and talents.

Having briefly considered the different definitions and explanations used for over a century to refer to giftedness or abilities that make them stand out from others, it can be seen that characteristics and attributes relating to giftedness have also varied throughout the century. There has been a shift from the initial intelligence-related view (Terman, 1925) to a creativity-related definition put forward by Torrance (1965) and then to a move to a wider view of giftedness, which includes numerous aspects of human contributions to life (Hagen, 1980; Fox, 1981; Gardener, 1991; Renzulli; Stenberg, 2004). It is also worth noting that there are differences in the way giftedness is defined across cultures and different countries.

This section focused on different definitions of giftedness and how the definitions evolved over time as conceptions of giftedness changed. The definition of giftedness which was first conceptualised as a single dimensional, fixed, measure of human ability has changed to a more liberal definition which reflects the developing nature of ability which is multi-dimensional. The new definitions also take creative productivity into account which can encourage the translation of giftedness into achievement.

Characteristics of the Giftedness

This section focuses on the characteristics of gifted students, some of which closely relate to the concept of giftedness which was described in the previous section. Lists of characteristics of gifted children are generally designed to help to recognize the attributes of gifted children in order to offer them suitable provision.

One of the first studies which described the characteristics of gifted students was a study by Terman and Oden (1951). Their study summarized the characteristics of gifted students which include characteristics other than test results and high grades, as can be seen below:

- They have better physical, mental and fitness status than their peers.
- They show high ability in reading, using language, mathematical skills, science and arts.
- They have their own interests and practice different hobbies in order to gain a lot of information.
- They are self-confident and score high grades in tests of personality stability.
- They have aptitude and a leaning towards all kinds of careers.

Twenty six years later, the American Education Office (Marland, 1972) listed six basic characteristics which are displayed by gifted students. Each one is followed by a group of specific attributes and indicators which distinguish gifted students from others. They are as follows**:**

General intellectual ability or talent

Ordinary people and educators alike usually define this in terms of a high intelligence test score. Parents and teachers often recognize students with general intellectual talent by their wide-ranging amount of general information and high levels of vocabulary, memory, knowledge, and abstract reasoning.

Specific academic aptitude or talent

Gifted students with specific academic aptitudes are identified by their obvious performance on an achievement or aptitude test in one field such as mathematics. The organizers of talent searches sponsored by a number of universities and schools identify students with specific academic aptitude who attain high scores in Scholastic Aptitude Tests (SATs). SATs are used widely in the USA.

Creative and productive thinking

This characteristic deals with bringing up dissimilar ideas or elements to come up with new meanings that have social value. Characteristics of creative and productive students include openness to experience, being playful, willingness to take risks, tolerance of ambiguity, positive self-image and the ability to become submerged in a task. Creative and productive students are identified through the use of tests such as the Torrance Test of Creative Thinking or through demonstrated creative performance.

Leadership ability

Leadership can be defined as the ability to direct individuals or groups to a common decision or action. Students with leadership characteristics use group skills and discussions in difficult situations. Many teachers recognize leadership through a student‟s keen interest and skill in problem-solving. Leadership characteristics include self-confidence, responsibility, co-operation and the ability to adapt readily to new situations. These students can be identified through instruments such as the Fundamental Interpersonal Relations Orientation Behaviour (FIRO-B).

Visual and performing arts

Gifted students with talent in the arts demonstrate special talents in visual art. These students can be identified by using task descriptions such as the Creative Products Scales, which were developed for the Detroit Public Schools by Patrick Byrons and Beverly Ness Parke of Wayne State University.

Psychomotor ability

This involves kinaesthetic motor abilities such as practical, spatial, mechanical, and physical skills. It is seldom used as a criterion in gifted programmes (Marland, 1972).

The above descriptions can be seen to be even broader and less rigid than relying solely on IQ measures, thereby allowing more people to be classed as gifted. A number of other authors have

produced checklists describing the characteristics of gifted pupils (Koshy, 1997; Freeman, 1998).

Clark (1992) describes the characteristics of gifted students within five fields. They are:

- Knowledgeable characteristics (thinking).
- Emotional characteristics (feelings).
- Physical characteristics (sensible)
- Intuitive characteristics.
- Social characteristics.

Using a questionnaire for parents designed by Rogers (1986), the following characteristics emerged from a comparison of 100 „gifted" and „average" children:

- rapid learning ability;
- extensive vocabulary;
- good memory;
- long attention span;
- perfectionism;
- preference for older companions;
- sophisticated sense of humour;
- early interest in books;
- ability to do puzzles and mazes;
- maturity;
- curiosity;
- perseverance;
- keen powers of observation.

An Arabic study, that was carried out by Al Soror in 1989 (cited in Alsurur, pp22, 2003) proposed the existence of five basic categories of gifted children"s behavioural characteristics in Jordan. They are:

- Behavioural characteristics in leadership such as being popular with peers, responsibility, co-operation and participation with teachers and peers.
- Behavioural characteristics in learning such as a wide range of knowledge (quantity and quality), high knowledge ambitions and a considerable interest in reading.
- Behavioural characteristics in creating; such as curiosity, imagination and risk taking.
- Behavioural characteristics in perseverance; such as seeking perfectionism and participating in all activities and productions.
- Behavioural characteristics in flexibility of thinking, such as rapid reactions, good ability in judging things and a willingness to change a routine.

A working paper about measurement questionnaires on ages and stages has been used in the last four years in Saudi Arabia, which was originally developed in the USA. This scale includes 19 branch measurements to measure the abilities of infants ranging from birth to 5 years old. Experimental studies were also carried out for that scale on more than one Saudi child who was under the age of five. It was claimed that the research has had positive results in identifying gifted students (Alothman, 2006).

It is interesting to note from the Arabic study that there were many similarities between the characteristics displayed by gifted students in Arab countries and their peers in western countries. It would appear that culture does not directly affect gifted students" behavioural characteristics.

Identification using a broader conception of intelligence

Broader conceptions of intelligence were introduced by experts such as Renzulli (1978) Gardner (1983) and Sternberg (1997). Their conceptions of giftedness often defied assessment through the traditional identification process using tests. These educational researchers have deviated from the early theories and concerns about identification of giftedness. For example, Baldwin (1984) proposed the Baldwin Identification Matrix, which provides a practical set of guidelines relating to the identification of giftedness.

1. Giftedness can be expressed through a variety of behaviours and the expression of giftedness in one dimension is just as important as giftedness in another.
2. Intelligence is a broad concept that goes beyond language and logic; it encompasses a wide range of human abilities.
3. Carefully planned subjective assessment techniques can be used effectively, along with objective measures.
4. Giftedness in an area can be a clue to the presence of potential giftedness in another area or a catalyst for the development of giftedness in another area.
5. All cultures have individuals who exhibit behaviours that are indicative of giftedness (p. 3).

Howard Gardner's theory of Multiple Intelligences (MI)

In the early 1980s, another challenge to the conventional thinking on the nature of human intelligence and giftedness was launched by Howard Gardner (1983), with the presentation of a new theory described as the theory of MI which proposed the existence of Seven Intelligences. Although the theory of multiple intelligences was not originally designed for educational purposes, it was embraced by educationists all over the world as a fair and practical way of assessing abilities and making appropriate provision (Koshy, 2002). Gardner"s theory unites giftedness and talent and describes them as intelligences. Koshy"s (2002) interpretation of the seven intelligences is provided in Table 1.

Linguistic	Enjoys activities involving the use of words, spellings, memorising poems, riddles; enjoys discussions - factual and imaginative; can verbalise ideas; expresses ideas orally or in writing; is a good story-writer or teller; has an extensive vocabulary; asks many questions; shows interest in English and responds well to the challenge of other languages.
Logical-Mathematical	Enjoys playing or working with number activities; awareness of pattern and subsequence; assembles puzzles with skill; produces logical arguments; sorts objects using different criteria and finds similarities and differences; problem-solving skills and shows skills in dealing with unfamiliar contexts; able to plan and describe steps in order and explain reasons.
Spatial	chess; painting; shows aptitude for constructions and designs; shows the ability to dismantle things and reassemble; ability to organise and group objects; demonstrates artistic flair; responds well to texture, colour and pattern; visualises details and perspectives.
Musical	Playing music; appreciating music; enjoys musical activities; shows aptitude to reproduce new melodies or rhythm; compose music patterns and melodies; shows ability to identify musical instruments heard in musical compositions; plays musical selections by ear or hums it melodically; experiments with objects to create different sounds.
Bodily-kinaesthetic	Sports; gymnastics; good motor skills: skipping, jumping, balances; uses body with agility; shows ability to master new physical skills; enjoys touching and manipulating objects in order to learn about them; shows aptitude with movements, e.g. dancing.
Interpersonal	Enjoys helping others; shows a sense of fairness for members in a group and shows empathy; shows leadership skills; expresses feelings to others; shows the need to meet own needs through other adults and peers; participates in group activities; builds relationships easily.
Intrapersonal	Shows awareness of own strengths and weaknesses; shows ability to be self-reflective and engages in self-evaluation; shows self-confidence; capable of laughing at oneself; takes risks; sticks to own beliefs; shows ability to work independently; shows persistence in self-reflected activities.

Table 1. The attributes relating to Gardner"s Multiple Intelligences

Originally, Gardner (1983) proposed the seven forms of intelligence: linguistic, musical, logical-mathematical, spatial, bodily kinaesthetic, and intrapersonal (e.g. insight, metacognition), and interpersonal (e.g. social skills) Later, in 1995, the forms had an extra eighth form of intelligence environmental or naturalist intelligence; in addition, in recent times, there has been added a ninth form of existential intelligence.

Although Gardner obtained world acclaim for his seminal work on the theory of Multiple Intelligences, it too has its critics. Freeman (1998) found a weakness in the evidence of Gardner's new theory, believing that it has not been subject to further investigation and that Gardner's theory it is not based on research evidence. Gardner, however, claims that his work has an empirical base.

Discussion

The conceptions and definition of gifted children are closely related to the process of identification of giftedness. In this section literature on methods of identification of gifted students is reviewed, which will be followed by a review literature on aspects of provision of educational opportunities that will extend and/or enrich the learning of the gifted students. It could be argued that using accurate methods of identification is critical in determining the nature of provision. For example, Gubbins (1995) believes that identifying gifted and talented students is not just about answering the question, „who are they?" but it must also address the question, „how do we find them?" and „what do we do when we find them?"

A number of methods of identification can be found in literature relating to giftedness. In some countries, the only means used for identification is the use of standardized tests. In others, the standardized test is only one of the factors in the identification process and in addition to test scores, nominations and recommendations of teachers, parents, staff, and even self-nomination are used (Blackshear 1979; Denton and Postlethwaite, 1984).

Bondagjy (2000) believes that a single test to determine general ability may not be sufficient and that subject-specific tests may need to be used:

Standardized tests of intelligence offer a good base for staff to identify potential capability, including that of some pupils whose performance is otherwise undistinguished as poor. In a few schools the tests are used in isolation without reference to individual aptitudes in specific areas of the curriculum, either as a short cut for selecting pupils for special enrichment courses, or for determining the composition of teaching groups of. This is less useful than if combined with a subject-specific test. (p.20)

Standardised tests are used widely by the supporters of the theories of a one-dimensional view of ability, which go back to the first theories of intelligence, such as Spearman"s theory, mentioned in the previous section, which has been received with both enthusiasm and also with scepticism and rejection. The arguments against this single-dimension view of ability (based on general intelligence that consists of areas that are highly correlated with each other and that are mainly intellectual and tested using IQ tests) led to the creation of multi-dimensional theories of ability, such as that of Renzulli, (1978) Gardner (1983, 1991), Sternberg (2000) and others. The multi-faceted theories of giftedness are viewed by many to be more appropriate to define and identify high ability. These authors along with Csikszentmihalyi, Rathunde &Whalen (1997) and Benjamin Bloom (1985) have all made compelling arguments for a much broader conception of giftedness. Chongde & Tsingan describes the contribution to the more liberal conceptions of giftedness as:

Many western theories of intelligence focus on its physiological or cognitive components. However, Howard Gardner's theory of multiple intelligences (1983, 1991), Robert Sternberg's triarchic theory of intelligence (1985) and Stephen Ceci's bioecological theory of intelligence (1996) are much broader in scope. They combine and extend aspects of the biological, hierarchical and contextual views of intelligence which include interactions between mental processes, contextual influences and multiple abilities. (2003, p18)

The following chapter will start with the general aims that will be pursued and will analyse in depth the main questions, the research methods that will be followed, details about the sample to be used as well as the expected difficulties of the research process.

To that end, it is noteworthy that evidence suggests (Al-Ghamdi, 2007) that there are very few programmes for gifted students run by the Ministry of Education in the Kingdom of Saudi Arabia. The programmes that do exist are new and in need of evaluation and further development in order to provide maximum benefit for gifted students. The Saudi Arabian government is keen that the gifts and talents of the young people in the country are nurtured (Mawhiba, internet reference, 2007). The authorities in the government believe that if there are sufficient schools making commitments for enhanced opportunities for gifted students, the result could be the identification of more gifted students, additional benefits for gifted children and a successful future for the country (Hassanan, 1997).

At present, in Saudi Arabia, gifted students who have special characteristics of giftedness or special abilities qualify for provision at the highest levels of services. But practitioners feel that there is a need for more well-developed and organised special programmes that cater for and develop these students" abilities.

Since 1999, the Ministry of Education in the Kingdom of Saudi Arabia has demonstrated a strong interest in its gifted students by putting in place programmes that are developed specifically for these students; however, these programmes are rare and new. Therefore, the current research provided an avenue to identify gifted students based on multiple intelligences theory. To that end, Future research might finds it fruitful to provide greater illustration on the models of giftedness identification.

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