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A Systemic Review based Study of Gifted and Talented

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Abstract

Purpose of the study: while gifted and talented students are often defined as individuals who have shown an above-average academic performance compared to their peers of the same age group, there are still some disagreements around what constitutes a gifted individual.**Methodology:**A systematic review based-study was conducted for existing literature regarding different definition about giftedness and talentless anddifferent issues related to talent and giftedness.
Findings: Researchsuggests that the definition of giftedness should go beyond the domain of schooland into non-academic areas. In this review, the different definitions of giftedness are summarized.We also provide an analysis of the main characteristics of gifted and talented individuals, as well as a discussion on the possible differences between being gifted and talented. In addition, we examine differentmethods commonly used for identifying gifted individuals and its implications for underrepresented groups. We discuss new techniques that will help identify children from lower socio-economic backgrounds.
Originality/value: We conclude with a discussion on how to improve someunresolved issues in the field, mainly focusing on an integrative definition of giftedness that will improve the detection of gifted children and thereby enhance the current enrichment programs tailored to these individuals.

Key words: Giftedness, Talent,Intelligence, Special Education,Educational Psychology.

Introduction

The term “gifted and talented” can be defined in many different ways. One reason for all of the varying definitions is that throughout history, there have been changes in how individuals view human intelligence (Haight, 2005; Winstanley, 2005). Some researchers believed that giftedness has only one facet, while others believe it is related to a combination of factors (Purcell & Eckert, 2006; Sosa & Colangelo, 2007; Hymer, Whitehead & Huxtable, 2009). Some researchers arguethat intelligence, arguably a key element in giftedness,is a genetic

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trait, while others state environmental factors play an important part. As time progressed, researchers have become aware of the social and political factors that have affected the definition of giftedness. Giftedness is not a one size fits all construct (Coleman & Cross, 2001). Definitions have been modified to include varying cultural and economic factors, as well as for individuals with disabilities.

Research in the area of giftedness has also shown that factors that were once thought to be synonymous, like creativity and intelligence, are in fact separate entities (Betts, 1985). In addition, severalstudies (discussed below) of gifted adults have shown that there are social and cultural elements in an individual's life that contribute to his/her intellectual ability. Finally, the constantly changing environment has to be factored in when defining giftedness. At present times, there is more information and technology at people's fingertips. Lifestyles are changing. The talents and abilities that a person must have today in order to be successful are different than those in earlier times (Jarosewich, Pfeiffer, & Morris, 2002). All of these factors are related to thedifferent definition of the word "gifted" and talented (Coleman & Cross, 2001).

The majority of these definitions focus on an individual's differences and intelligence, as they consider the gifted and talented student to have a natural gift, above and beyondsame-age pupils (Winstanley, 2005; Fernandez, Garcia, Arias-Gundin, Vazquez, & Rodriguez, 2017; Makel, Snyder, Thomas, Malone, & Putallaz, 2015;Casino-Garcia, Garcia-Perez, & Llinares-Insa, 2019; Rodriguez-Naveiras, Verche, Hernandez-Lastiri, Montero, & Borges, 2019; Worrell, Subotnik, Olszewski-Kubilius, & Dixson, 2019).This approach defines the gifted and talented child as measured by standardized pedagogic tests (GTWISE 2005; DfES 2006). However, other scholars have included the child's individual competencies in the academic or creative fields as measures of giftedness (GTWISE 2005; DfES 2006). Even by using this approach, which considers nurturing children who are gifted and talented, researchershave found that there is a disagreement about what is understood by 'the gifted and talented child' from the view point of intelligence and multiple intelligences in subjects such as music, mathematics, interpersonal and verbal ability (DfES, 2006).

Recent research has acknowledged past scholars' efforts to define giftedness based on empirical investigations and devise mechanisms for the development of gifted children (Subotnik et al., 2011; Subotnik et al., 2018). The current investigations view giftedness as a developmental continuum in that at the beginning, potential is a key variable, while in later stages, achievement is the measure of giftedness. The goal is to provide a definition of giftedness that is useful across many domains. Based on several researchers in the field (Worrell et al., 2019; Johnsen, 2011; Ullén et al., 2016; Subotnik et al., 2011), there is aconsensus that giftedness should reflect the values of society and should be manifested in outcomes related to specific domains of endeavor and should be a result of biological, pedagogic and psychosocial factors. The research on defining giftedness will be further discussed in this paper and the implications it holds for devising enrichment programs and enabling the detection of underrepresented children.

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Identifying gifted and talented students

There is currently a lack of nominal scales that would help identify gifted students, and this is partially due to the diverse conceptions of this construct. Through the use of statistical analysis, a more refined and operationalized definition could be devised that would help detect gifted students. In addition, Smutny (2003) arguedthat giftedness might change over time in children, and thus scales should take this into account. To address this lack of consensus, researchers have begun to investigate what could be considered the best practices to identify gifted children. Johnsen (2011) argued that the instruments used should be psychometrically sound, with demonstrated construct validity and reliability for the specific population being tested. It is argued that the test results should inform about the type of program required for accelerated leaners. However, to our knowledge, these recommendations have not yet been implemented due to a lack of resources. Below, we discuss prior attempts to define and identify talented and gifted students.

Early research on intelligence was performed by Francis Galton (Davis, Rimm, & Siegle, 2010), who believed that intelligence is relatedto thesharp abilities of the senses of an individual and that an intelligent person would complete tests that measured their abilities based upon the senses of acute vision, auditory sense, sense of smell, sensitivity to touch in addition to the quick responses to reactions (Davis et al., 2010).Alfred Binet developed a battery of tasks that would help quantify intelligence in children and relate it to age (Davis et al., 2010). Binet's test would form the basis of the Stanford-Binet Intelligence test developed later in the United States by Lewis Terman. However, Binet objected to the use of his test as a one-dimensional construct (Davis et al., 2010). In 1916, Terman used the Stanford-Binet Intelligence Quotient (IQ) to identify gifted students. If a student achieved ascore of 140 or above, he/she was labeled a genius (Simonton, 2000). In 1925, Terman defined giftedness as scoring in the top 1% on an intelligence test. Since then many researchers have struggled to define giftedness in a way that captures its full complexity. Based on Terman's calculations, the identification of gifted students was made using a score without considering other influencing characteristics. Nason (1958), for example, defined giftedness as obtaining exceptionally high scores. This verification method, however, caused many students to be overlooked in those years. Along these lines, Macclain and Pfeiffer (2012) argued that IQ alone does not predict a child's long-term success in life. They state giftedness should be viewed as a multidimensional construct that investigates factors such as a person's commitment, self-confidence and opportunities.

In 1978, Renzulli, a leading researcher in the area of gifted education devised a model named the Three Ring Conception of Giftedness, which supported the developmental process of gift and talent. The three-ring theory focuses on three fields of human creativity and giftedness: Above Average Ability, Task Commitment, Creativity (Renzulli, 1979, 1980, 1988). Renzulli further refined the definition of giftedness into two types: schoolhouse and creative/productive. Schoolhouse giftedness is determined by IQ and other standardized tests that measure cognitive abilities. Students exhibiting the creative/productive giftedness typecan apply information or content that they have previously learned to new domains and problems. Creative/productive giftedness differs from schoolhouse giftednessin that the former portrays the ability of the student to engage in inquiry-type questions, while the latter

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is based on structured process of storing and retrieving information from lessons. Both creative/productive and schoolhouse are equally important types of giftedness that can be exhibited in the same individual (Renzulli, 1982).

The identification of two types of giftedness was a major breakthrough in the definition of giftedness (Renzulli, 1982). To our knowledge, this was the first time it was acknowledged that there is more to giftedness than can be measured on an intelligence test. A major contributor to the concept of giftedness was Abraham Tannenbaum (Tannenbaum, 1983). He contended that the abilities of students who are gifted and talented are an indication of those who will excel with superior accomplishments in adult life. The ideas that are produced by the gifted and talented will impact the moral, physical, emotional, social, and intellectual qualities of life in our society. The gifted and talented are inventors who enhance our daily lifestyles with products such as the air conditioner, light bulb, medical advancements, technology, and communication devices
(Tannenbaum, 1983). For a person to be gifted and to achieve excellence, Tannenbaum listed five interwoven factors: superior general intellect, distinctive special aptitudes, a supportive array of nonintellectual traits, a challenging and facilitative environment, and the smile of good fortune at crucial periods of life (Tannenbaum, 1991). More recently, Sternberg, Jarving and Grigorenko (2010) incorporated previous research (Renzulli, 1982) to devise the Pentagonal Theory for Identifying the Gifted that outlines 5 criterions. The excellence criterion states that an individual ought to show greater capabilities in more than one domain compared to peers of the same age group. The value criterion states an individual should be excellent in activities valued by the society they live in. The level of excellence should be rare and lead to productive outcomes (i.e. scoring high on a test does not result necessarily in productivity). In addition, to determine giftedness, a person should demonstrate their ability in a variety of tests. The implication of this theory suggests that scoring well on an intelligence test may help during one's academic years, but unless it is transformed into a productive skill, it may not affect one's future life outcomes. Therefore, an individual who shows potential should not only foster their cognitive skills, but also their psychosocial capabilities to adapt to the rapidly changing environments (e.g. family, work, spouses, among others.).

Many programs consider giftedness based on academic achievement and IQ assessments alone. These definitions excluded artistic talent and creativity (Jarosewich et al., 2002). Willingham (2009) defines intelligence as the capability to understand complex ideas and use different forms of reasoning, as well as the ability to overcome obstacles by using thought and learn from experiences. Some research on giftedness has created identification guidelines that include more than IQ (Betts, 1985; Tannenbaum, 2000). Intellectual abilities, creative thinking, leadership, and visual and fine art skills are amongst the identified as important characteristics of talented and gifted learners. Betts (1985) also included academic ability. Researchers argued that students demonstrated gifted traits through various attributes, not just academic work (Purcell & Eckert, 2006; Sosa & Colangelo, 2007).

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Gifted vs. Talented

Most educational critics have argued that the terms talented and giftedhave a clear and undeniable distinction as a result of having a certain level of heterogeneity. The first definition of gifted child appeared in 1971 and it was referring to children or young people who present evidences of high level of achievement and capability in an area or more in the field of creativity, leadership, and/or intellectuality. In 1972, the Marland Report launched this definition to the Congress of the United States and presented that definition to the American Council of Education as a way to set a clear definition of the terms gifted and talented pupil in education. Renzulli (1988) managed to define the term as the intersection between three human characteristics, including the above-average abilities, the level of commitment to the task, and the level of creativity. Within the course of time, the definition of gifted and talented education began to take a more mature character as a way to distinguish it from other types of education. Renzulli and Reis (2002) stated that gifted and talented people are those who have a high level of abilities and potentials and are willing to apply those abilities in any field of human achievement and performance. It can beseen that through the different definitions of gifted and talented thatthere was a tendency toward the concepts of high ability andpotential, which implies these abilities and potentials come already within the person,without any external motivation.In other words, these definitions assume that these abilities are mostly innate.

However, Gagné (1995) attempted to develop a distinction between being gifted and talented, as most people tend to use both terms indistinctively to refer to a student who shows an excellent educational level. Gagné (1995) postulated that giftedness refers to the abilities and potentials that are found in a person and these abilities can give the person a potential to perform an action in an excellent way compared to ordinary people.The First Nation's Schools Association in Vancouver, Canada (2002) defined a gifted child as a student who has an "exceptional ability to learn" in certain fields,including academics and creativity, as well aspossessing personal traits like leadership, independence or intuitiveness. Conversely, Freeman (2005) defined the concept of giftedness in two ways.Firstly, there are those children who prevail with high and exceptionalpotentials to perform an action ,while the second definition refers to children with potentials and abilities who have not yet been detected by experts and formal tests. Gardner emphasized the idea that giftedness and talent is something broader than an ability to perform an action, but rather also the ability to engage in music, interpersonal knowledge and social abilities. To support his argument, Gardner presented seven intelligences – which he called the "Multiple Intelligences" –which include: mathematical, linguistic, spatial, music, kinesthetic and personal intelligence (Reid & Romanoff, 1997). He argued that individuals who were outstanding in at least one of these areas could be considered gifted (Worrell et al., 2019). Winstanley (2005) argued that giftedness should be viewed as a child who has multiple exceptionalities in areas of general cognitive ability and domain-specific intellective capacities. The paper further states that there ought to be an interdisciplinary approach that includes therapists, counselors and educational representatives in order to unify the conceptualization of giftedness and thereby facilitate its detection and program support.The increased interest shown by researchers has managed to draw the attention of most of the educational bodies concerning presenting a

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sufficient and healthy definition for the terms gifted and talented. Many definitions and views have been negotiated over the years. For example, the Council of Curriculum Examination and Assessment (CCEA) in Northern Ireland published a report in 2006 arguing that there are gifted achievers who work diligently and are able to excel in all academic domains. However, there are also gifted students who underachieve due to boredom or a need for perfectionism. The report emphasized the need for a balance between a conservative (i.e. one-domain definition) and a highly liberal definition (i.e. includes many domains). The report refers to a set of general abilities that could indicate the profile of a gifted child, amongst which they highlight being a good reader, a quick learner or have an original imagination.

More recent work has investigated integrative models to understand giftedness. The Multifactorial Gene-Environment Interaction Model (MGIM; Ullén et al., 2016) integrates domain specific and general abilities, personality, interests, motivation, neural mechanisms and physical attributes, all of which are influenced by the environment and genes. More research is required to validate the applicability of this model in different contexts. Similarly, Subotnik et al. (2011,2018) created the Megamodel of Talent Development, which synthesizes the terms giftedness, talent, creativity, high-performance, expertise and eminence (Worrell et al., 2019).The main tenets of this model are that abilities are malleable, opportunities must be offered at the right developmental time and the development of talent is a long-term endeavor, extending beyond school years. Compared to previous models, the Megamodel of Talent Developmentfocuses on the cultivation of psychosocial skills rather than their mere identification in order to help the gifted individual transition from having high competencies to being an eminence. The implications for school counselors are that gifted children can expand their psychosocial skills if they are provided with support to address possible issues such as perfectionism, anxiety or underachievement. (Olszewski-Kubilius et al., 2015).

The term talent has been compounded with the term gifted for a certain period of time based on the belief that the two terms address children who have special abilities and skills or as it appeared in the CCEA report that the two terms "were often used interchangeably" (CCEA report, 2006). The overall definition and distinction between the two terms crystallized and took shape with the course of time and as a result of the attention given to it. Gagné (2007) defines giftedness as ab innate ability found in a student in one or more of certain fields including sensorimotor control and creative or intellectual domains. Further, Hymer, Whitehead and Huxtable (2009) argued both concepts impacts each other which was marked as a way to differentiate between them, meaning that a gifted student might end up being talented by giving the required attention to the gift that he/she has. To clarify this concept, many critics have argued that at some point a gift can become a talent. Along these lines, Professor Francoys Gagné has firstly differentiated both terms from each other, after which hereached a point where both of them fusedtogether to reach a degree of excellence. According to Al-Qefari (2010), talent refers to an excellent performance of a child in one area of life, which can include academics, business, leisure, sports and/or technology. Al-Qefari (2010) presented both terms in a way that each one was specificto a certain field of interest. He defined giftedness as a student who is brilliant in school and within the academic field, while talent refers to students who have abilities in creative arts, sports, technologies and/or

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music. Al-Qefari presented a delineation between the two terms arguing that giftedness is restricted to the academic field (school and curriculum) while talent covers the general activities of life. Marotta-Garcia (2011) argued that gifted students prove a higher capability or achievement compared to their peers in domains like arts, creativity and intellectuality. Marotta-Garcia (2011) adds that these categories of children who are consi t5dered to be gifted are supposed to have the fullest level of nurture and attention in a non-ordinary method than what normal children would receive in a regular educational setting.

As discussed above, the talented and giftedterms are highly convergent, and the differences are minute. Both terms refer to a highly capable student, but, when it comes to the differences between them both, and according to the literature, gift comes before talent, and talent is a result of a previously existed gift that is polished and refined to reach the state of talent.As a result of the definitions given to talent and gift, the Victorian Parliament of Australia reached a consensus decision that there is no universally agreed upon definition for the terms giftedness and talent. Nevertheless, Parliament(2012) presented a clear definition for the term giftedness, which was based on many scholarly articles accomplished by Francoys Gagné. It defined the term giftedness as a natural ability in one or more areas of life at the same time, while the term talent was defined as an excellent (superior) performance in one or several areas of life. Parliament reached a decision that emphasized the fact that through a complex process the gift (ability) can transform into talent contingent on the process of development it undergoes.

Issues related to talent and giftedness

Even though some students could qualify for talented and gifted programs, thereis oftena lack of school programssuited to their needs (Smutny, 2003).When the lack of formal recognition of talented and gifted students occurs, their talents go unnoticed. Importantly,talented and gifted individuals lose motivation to work hard if classroom teaching focuses on the average student (Lens & Rand, 2000). This is problematic as talented students were found to enjoy fitting in with other students (Stewart, 2007), even though many students do not accept them (Lens & Rand, 2000). Because of that, some gifted students do not display their talent (Hertzog, 2003). Gifted studentscan still experience academicstruggles and perhaps failure(Peterson, Duncan, & Canady, 2009).

Gifted students also have problems choosing a career, possibly due to having multiple options and difficulty to narrow down narrow their focus to one career (Kerr & Sodano, 2003).

Another issue is that low-income and minority gifted students are under-identified and are, therefore, under-represented in the gifted population (Swanson, 2000).This underrepresentation has been called the excellence gap (Plucker & Peters, 2016) and it postulates that children from lower income areas are at a disadvantage because they attend schools with less qualified teachers and are exposed to more punitive and exclusionary discipline (Carter & Welner, 2013). They also have fewer opportunities to attend extracurricular activities that will foster informal learning. As giftedness is still indexed by achievement scores, lower income children are underrepresented relative to their percentage in the population (Worrell et al., 2019). To address this, Worrell and colleagues (2019)

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outline procedures to better detect gifted children from poorer areas. Universal screening at an early age (3-4) is proposed to circumvent nomination and referral systems. There is evidence of its success in a diverse district in Florida (USA), which implemented the Naglieri Nonverbal Ability Test (NNAT; Nagliery& Conway,2009) and found that the detection of gifted children rose from 3 to 5 percent, with the number of low-income and minority children increasing 180%. Furthermore, Worrell et al. (2019) argues for eliminating teacher referrals as the primary source for identifying gifted children as teachers have been shown to be biased against minority group students (Card & Guliano, 2015).It is also argued that most teachers view giftedness as a fixed entity based on effortless learning. The findings suggest that parents and other students should also be involved in the referral process. Worrell et al. (2019) further posits that there should be customized local identification protocols, as well as the use of subgroup norms that have percentile cutoffs based on the performance of children from that area. In addition, there is evidence that implementing challenging curriculums can give children who have had fewer opportunitiesthe chance to display their abilities that might not be apparent in regular programs.

Several studies found that low socioeconomic studentsscored lower on standardized tests than most other students (Baldwin, 2004; Torrance, Goff, & Satterfield, 1998; Slocumb & Payne, 2000), possibly due to language problems. Along these lines, Slocum and Payne (2000) also mentioned that some students identifying of gifted students can be wrong. Overall, it seems that there are gifted low socioeconomic students but the system does not identify them as well as some gifted students do not show giftedness.

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