Gifted students: How to find them, how to teach them

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monografia

Sommario

Il contributo discute l'evoluzione del modello di valutazione dinamica dell'intelligenza e ne discute vantaggi e svantaggi. L'autrice, inoltre, pone alcune riflessioni circa il profilo di insegnante per l'allievo *gifted* ed espone l'approccio didattico *Inquiry Based Learning*.

Parole chiave

Valutazione dinamica dell'intelligenza, didattica, metodologie.

Talent, excellence, giftedness; scientific literature contains many different definitions of these concepts (Hoogeveen L. et al., 2004; Dai et al., 2011). In most cases, giftedness is seen as a condition for talent and excellence, with intelligence as a determinant factor (Feldhusen e Jarwan, 2000). However, giftedness is defined in various ways: from the traditional conceptions of IQ (Luis et al., 2000), to a broader vision with creativity and task engagement as partial components in addition to intelligence (Renzulli e Reis, 1997), within the framework of the triarchic theory of successful intelligence with attention to the analytical, synthetic and practical aspects of skills (Sternberg, 2003), or via multiple intelligences (Gardner, 1983; 1993; 1999). In multidimensional and dynamic visions, a distinction is made between potential and actual learning performance (see, among others Subotnik et al., 2011; Ziegler e Phillipson, 2012). Gagné's «Differentiated Model of Giftedness and Talent» (2000; 2003; 2010) represents such a vision, considering giftedness as unpractised, natural, intellectual, creative, socio-affective and sensory motor skills that can be transformed through learning and practice into measurable talents in areas such as science, art, business, social behaviour, sports and technology. According to Gagné, three types of catalysts are involved in the transformation from giftedness to talent: personal factors (such as physical, motivational and personality factors), environmental factors (such as persons, events or the social environment in which one lives) and chance.

Considering all these factors, identifying a gifted student is far from easy. Very able students may underperform due to associated learning problems, while others may not be motivated enough to complete a test well. Another group that deserves special attention are the underprivileged students, like minorities and children in difficult social economical situations. All those factors that

can influence a student's performance should be considered, and not just at one moment but over the course of time so that the pattern of potential and actual achievements can be tracked. Although a multidimensional dynamic vision of giftedness takes all those factors into account, research shows that (potential) excellence in children in disadvantageous situations is often less quickly identified because of other cultural values, negative attitudes from teachers and material neediness in the home situation (Worrell e Mello, 2007).

So how do we identify all (potentially) gifted students, even the less privileged ones? Many assessment methods are to some extent biased when it comes to cultural content and language-based instructions, which are to the disadvantage of children with a different cultural and language environment (Scott e Delgado, 2005). Besides that, most traditional tests focus on what a child is able to do at a certain moment in a certain situation and not on their potential abilities. This requires a different view on children's abilities, focusing less on what they can show us in a certain moment in specific circumstances, and more on what they will be able to learn, in other words, on their learning potential. The term learning potential stems from the theory of Vygotskij's zone of proximal development. He described learning potential as the difference between what a child can do with and without help. This difference, according to Vygotskij (1978), is the developmental potential of a child which he called the zone of proximal development. Feuerstein used this theory when he developed the Learning Potential Assessment Device (LPAD); he showed that, by using this test, children were able to show more abilities than was expected, based on other more static tests (Feuerstein et al., 1979).

Dynamic versus static testing

When we test children in a static way, we run the risk of a temporal factor in the child or their environment — like illness, or an event at school — makesing the result unreliable (Resing, 2006). Even if all circumstances are favourable, what we are doing is quantifying intelligence as a static characteristic, although we know that the intelligence of children is still developing (Sternberg e Grigorenko, 2002). For these reasons, it is worth considering a more dynamic way of testing.

Dynamic tests differ from static tests in many ways: (1) there is more than one measuring moment, while a static test is usually done at one moment; (2) in a dynamic test, contrary to a static test, a child receives training on how to solve the items (Haywood e Lidz, 2007; Sternberg e Grigorenko, 2002); and, (3) in dynamic testing results are compared with former results of the child while in static testing the results are compared to other children of the same age (Haywood e Lidz, 2007). So, instead of measuring what a child on a certain moment within a certain domain can achieve, a dynamic test measures the learning potential of a child (Resing, 1990; Sternberg e Grigorenko, 2002).

There are different ways to establish a dynamic test. The most common is the test-intervention-retest design, the so-called *sandwich format* (Sternberg e Grigorenko, 2002): Pre-test and post-test are two comparable static tests and between the two tests the child is trained. Although this training can be offered in different ways, the important characteristic is always the mutual exchange between learner and trainer (Haywood e Lidz, 2007). This can be done in an unstandardised way, where training is adapted to the need of the child, or it can be standardised, attributing the gain to the hints that are given (Budoff, 1987; Hamers e Resing, 1993). In the so-called

Cake Format (Sternberg e Grigorenko, 2002), the amount of hints depends on the needs of the child, while the content of the hints is standardised.

Although there are many reasons to use dynamic testing, there are some disadvantages that may explain why it is still used so seldom; the different ways dynamic tests are designed and the fac that the results are used to determine learning potential makes it complex to compare different dynamic tests, and, whatever design is used, dynamic testing is always time consuming and, because of that, expensive. When dynamic testing is used, this is mostly done with children of average or below average abilities. Recently, this way of testing has been investigated in gifted children too, with promising results (Vogelaar et al., submitted).

Dynamic testing of high intelligent children

Seeing as many highly intelligent children are not recognised by their teachers (Lidz e Marcrine, 2001; Van Kerkhof et al., 2012), and that even an intelligence test does not always identify them, as explained earlier, we should consider a more dynamic way of looking at abilities. Dynamic testing might be a better way to also find those children who have special educational needs because of their (very) high abilities (Borland e Wright, 1994; Lidz e Macrine, 2001; Skuy et al., 1990).

Research about dynamic testing in this specific group is still limited (Freriksen, 2015; Vogelaar et al., submitted). Calero, Belen, and Robles (2011) and Ferrera, Brown, and Campione (1986), studied the use of dynamic testing of highly intelligent children, and found that gifted children need less hints during training than non-gifted

children, and that there is a positive relation between scores on a dynamic test and intelligence (Ferrera et al., 1986). Ferrera et al. concluded that it is possible to measure the learning potential of gifted children. Assuming that gifted children have a larger learning potential — they learn faster and are better at generalising information (see also Kanevsky, 2000; Resing, 1990) —, they concluded that a dynamic test can predict high intelligence in children. This is in line with the finding of Vogelaar (2016), who stated, after testing Dutch children with high abilities in a dynamic way, that dynamic testing results in a more accurate view of children's cognitive potential. He especially recommended dynamic testing when metacognitive deficits or test anxiety are suspected. According to Vogelaar (2016), dynamic testing can prevent underestimation of children's abilities, which can lead to a loss of cognitive potential.

Teaching the Gifted Student

When we know that a child is gifted, in the sense that they have a larger learning potential than most of their classmates, we have to think about adapting the curriculum. The education we offer to gifted students is one of the catalysts Gagné (2010) mentions in his *Developmental Model of Gifted and Talented*; education that, meets the special needs of gifted students, is necessary to support them in their development in order to enable them to turn their potential into achievements. Before we can decide what curriculum we offer to gifted students, we have to settle on what goals we want to reach. Do we want to provide «...the best possible education to our most promising students so that we can reassert [...] prominence in the intellectual, artistic, and moral leader-

ship of the world» (Renzulli e Reis, 1991, p.26)? Do we think that «Each nation needs brilliant minds that can see alternative answers to pressing problems, assuming that the student of average ability will not find the cure for cancer, or new uses for corn, or ways for peacefully solving conflicts of interest» (Gallagher, 2008, p.5)? And do we agree that «outstanding achievement or eminence ought to be the chief goal of gifted education» (Subotnik et al., 2011, p.3)? If we agree with the opinions of the above quoted scientists, the question is how we can reach that. Based on general literature, Peeters, Verlinden, Hoogeveen, and Goossens (2014) summarized the needs of gifted students as (1) Shortened instruction aimed at abilities; (2) Top-down instruction; (3) Big learning steps'; (4) Open assignments; (5) Encouraging higher order thinking skills; and (6) A coaching teacher. According to Davis, Rimm and Siegle (2015), *Enjoyment*, *Choice*, *Challenge*, *Personal meaning* and *Interest* are important characteristics of good education.

Betts and Neihart (1988; 2010) showed us that, in establishing our curriculum, we have to consider what kind of student we are dealing with: an autonomous student, who shows a lot of own initiative, a successful student, who will need much more support and encouragement to achieve, or a creative student, who requires understanding for their sometimes inappropriate behaviour and who needs open communication instead of punishment. So, one type of curriculum fits all (gifted students) does not apply here. We have to consider different approaches of educating highly able students, like compacting and enrichment, pull out programs, acceleration and full time education for gifted students. In this article we will focus on one way to adapt the curriculum for our gifted and talented students, *Inquiry Based Learning*.

Inquiry Based Learning for Gifted Students

Inquiry Based Learning (IBL) is a form of instruction that challenges students to think of research questions and subsequently find the answers to those questions (Lazonder e Harmsen, 2014). The goal of this approach is to inspire students to wonder about the world around them, to be curious, and, taking their wonderment and curiosity as a starting point, to encourage them to observe, think, act, and reflect (Gijlers et al., 2009). Apart from cognitive development, IBL gives room for creativity, critical thinking and acting, collaboration and sharing information (Ryan, 1990). *Inquiry Based Learning* consists of seven research phases: (1) introduction; (2) exploration; (3) setting up the study; (4) executing the study; (5) conclusion; (6) presenting; and (7) deepening and enriching (Van Graft e Kemmers, 2007). It is not difficult to imagine that this kind of learning might be especially appropriate for gifted students, if we consider that most gifted students have broad problem-solving abilities (Shore e Kanevski, 1993; Webb, 1993), strategic flexibility (Barfurth et al., 2009; Shore e Kanevski, 1993), creativity (Webb, 1993) and critical thinking skills (Maker e Nielson, 1996).

Considering these characteristics, the didactics of *Inquiry Based Learning*, like offering them space to explore the world as a scientist, will be appealing and enrich their learning (Peeters et al., 2014). Of course, we have to take into account, again, the differences between gifted students, and we should not forget, that, although gifted, these students still need sufficient structure in the form of scaffolding, in the setting-up of the hypotheses, the experimenting and concluding (Eysink e Gersen, 2014). Specific support is essential for them to take advantage of open and complex tasks. Research

considering Inquiry Based Learning specifically for gifted students is scarce, but early results show that motivation, an important catalyst in helping students to perform at a level which is in accordance with their abilities (Gagné, 2010), seems to increase in gifted children who participate in this kind of learning (Damhuis et al., 2015).

The teacher

Although more research is necessary, *Inquiry Based Learning* seems to be promising for motivating gifted and talented students to fulfil their potential. However, this will only succeed, if students have, apart from an inspiring programme, the teacher they need. Based on different sources, Davis et al. (2015) mentioned many characteristics that exemplary teachers of the gifted should have: according to them, they should be highly intelligent, enthusiastic, aware of students' needs, energetic, ready to do extra work and ready to experiment.

Besides that, they should be patient, sensitive, respectful and empathic and they need to be able to recognise individual differences. Along with accepting responsibility for individual children, they should create a vibrant, warm, safe and democratic learning environment, and have confidence in their students, be imaginative, innovative, flexible and open to change.

They should have cultural and intellectual interests and broad general knowledge, besides being honest, fair and objective. Some of the other characteristics Davis et al. mention, are matureness, experience, self-confidence, emotional stability, willingness to learn with and from students, control over their personal lives and the ability to communicate and work with colleagues, students, parents and other professionals. Of course, every child would like a teacher like this. Can we ask that much from our teachers? Vialle and Quigley (2002), who asked gifted students themselves what they believed were the prerequisite characteristics in teachers of the gifted, found out that these students qualified personal and social qualities over their intellectual qualities. So, without demanding all the characteristics Davis et al. mention, we can ask teachers to challenge their students to think, to use their pedagogical abilities, offer positive academic feedback and feed forward (Hattie e Timperley, 2007) and act, as Wolfensberger (2011) stated, following the «six habits of highly inspiring teachers»: be authentic; have courage; be challenging; invest in relationships; «walk the talk»; and «live the dream». Knowing that a good teacher can be an important role model for their students (Shavinina, 2009), we should train our teachers well and respect them accordingly.

Can we match the educational system with highly able students?

This article makes it clear: it is not easy to square the educational system with the needs of gifted and talented students. First, we have the problem of identifying them, which is related to the fact that there is no unambiguous definition of giftedness. It might help if we did not focus on the fact that a student is or is not gifted, but focused on their learning potential, using dynamic testing. We might organise our education in such a way, that the labelling of gifted students is not necessary.

Inquiry Based Learning can be one way to motivate all students, including the gifted ones. We can do this, if we have excellent, and trained, teachers. So, it is my conviction that if we have a clear vision of the goals of education, understand that there are various types of highly able students, are awaew of

the possibilities of adapting the curriculum, have the courage to stay out of the way of the autonomous learner, and help the successful learner out of their comfort zone, and if we can show our own passion for learning, being a role model for students, we can match the educational system to all our students, including the ablest ones.

Gifted students: come individuarli, come educarli

Abstract

Il contributo discute l'evoluzione del modello di valutazione dinamica dell'intelligenza e ne evidenzia vantaggi e svantaggi. L'autrice, inoltre, pone alcune riflessioni circa il profilo dell'insegnante per l'allievo gifted ed espone l'approccio didattico Inquiry Based Learning.

Keywords

Valutazione dinamica dell'intelligenza, didattica, metodologie.

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