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A Literature Review on the Policy Approaches and Initiatives for the Inclusion of Gifted Students in OECD Countries

Second Meeting of Country Representatives, 3 March 2020, OECD Conference Centre, Paris

This working paper aims to understand how education systems are currently dealing with giftedness and to identify policy approaches and initiative that promote the inclusion of gifted students.

This draft paper is part of Phase II of the OECD Strength through Diversity Project: Education for Inclusive and is meant for comments at the upcoming second Meeting of Country Representatives on 3 March 2020.

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Introduction

At the age of 5 years old, Tom decided to become an astrophysicist. This was a decision he came to after contemplating the relationship between black and white holes in space. That same year, he experienced an existential crisis that led him to an advanced state of depression. Interviewing him last year at the age of 11, The Economist's *1843* magazine[1] discovers that he now creates maths exam papers for fun and is working towards his maths A-Level- examinations other students in the United Kingdom usually sit between the age of 16-17 years old.

In conversations about educational policy and issues of equity and inclusivity, gifted learners like Tom, who was discovered to be in the top 0.1 per cent of intelligence in the United Kingdom, tend to occupy a marginal space. This marginalisation mostly stems from the assumption that in displaying signs of exceptionality and high intelligence, learners identified as gifted will inevitably achieve educational success without additional support. In reality, however, gifted students can happen to be left behind and underserved in classrooms unable to meet their specific educational needs.

Such assumptions have also meant that, traditionally, gifted education has been accused of elitism and inegalitarianism, and further criticised for catering to students that already have a socio-economic advantage (Ford, 2012[1]; Lovett, 2013[2]). Nonetheless, expansions and changes in the field with regards to definitions, modes of identification and the types of intervention implemented, continue to address such criticisms and provide new paths that reflect the heterogeneity of gifted learners. Moreover, the incorporation of social justice and inclusive values into the field that grapple with issues of diversity and access has meant that gifted education is increasingly regarded as necessary to creating equitable and inclusive education systems able to address and adapt to the needs of *all* students.

Giftedness as a topic is absent from OECD research on educational policy. Building on OECD and other literatures on education and equity, this review aims to contribute filling the existing gap and adding to the organisation's knowledge on inclusion. Overall, this working paper is structured in three main parts.

The first section provides a theoretical overview of the literature regarding definitions of giftedness, modes of identification, how giftedness intersects with other dimensions of diversity and arguments highlighting the potential individual and social outcomes of gifted education. In doing so, it will take into account previous and current debates, core issues and areas of convergence. The following three sections of the review look at giftedness through the analytical framework that guides the *OECD Strength through Diversity Project* (OECD, 2019[3]). As such, it surveys policy initiatives and practices in the domains of governance, resources, capacity building, school-level interventions, and evaluation and monitoring that address the inclusion of gifted students in the education system. Finally, the last section aims to identify further challenges and opportunities linked to gifted education, and reflects on inclusive practices in this field.

[1] See: https://www.1843magazine.com/features/the-curse-of-genius.

1. Giftedness: Conceptualisation, Identification and Policy Challenges

As of today, no international consensus have been reached on the definition of giftedness. There is a great diversity of conceptualisation not only between, but also within countries. Inevitably, it has a major influence over how countries engage with giftedness in education systems – the identification and placement processes, the type of programmes implemented, the distribution of resources, and how professional development programmes are organised. How countries understand and define giftedness and which official definition they adopt if they do so, therefore has important consequences for the policies and interventions that follow.

This first section aims to give a general understanding on the notion of giftedness by reviewing the main theories and conceptualisations of intelligence. It provides with an insight in the dominant definitions and the challenges related to the conceptualisation of such a concept. Based on this academic review, this part then gives an overview on countries' approaches to this dimension of diversity in student populations, that is, a mapping of official definitions and related identification methods across member countries.

This section aims to give an overview on the academic debates around giftedness and on the different definitions that countries can adopt in their policy and programmes for gifted students.

1.1. How to measure intelligence? An ongoing and controversial academic debate

The definition of giftedness is a subject of great controversies within the academic literature. Research in this topic is largely dominated by discussions between psychologists, the majority of them from Western European countries and North America. That said, various "models" of giftedness have been formulated with no clear consensus on what the gifted label means (Worrell et al., 2019[4]; Heller-Sahlgren, 2018[5]; Carman, 2013[6]; Terriot, 2018[7]).

The definition of giftedness is intimately linked to that of intelligence. Authors adopt different approaches regarding the definition of intelligence and have designed various methods to identify gifted individuals. In spite of ongoing controversies, academics nonetheless agree on the fact that giftedness (1) is mainly a label, (2) can be applied in a general or a specific way (i.e. intelligence is an overall ability or can be divided and measured in separate domains), (3) is subject to conceptualisations that vary across time and space (Kaufman and Sternberg, 2008[8]).

Giftedness is commonly understood as the fact of an individual having a considerably high Intelligence Quotient (IQ) according to recognised IQ tests assessments. When it comes to young people, a child or adolescent is identified as gifted when s/he has more advanced intellectual capacities or physical abilities than the other children of her/his age and performs above a certain limit fixed by a psychologist in an IQ test. Therefore, the definition of giftedness is intrinsically linked to the model of conceptualisation of intelligence on which the identification of gifted individuals is based and, in this sense, to the value a society gives to certain abilities and talents rather than others.

Conceptions of giftedness range from conservative ascriptions of individuals with high intellectual abilities determined by cognitive assessments or IQ (intelligence quotient) tests, to more liberal or multi-categorical approaches that point out the limitations of describing

intelligence in a unitary way (Murphy and Walker, 2015[9]). According to "conservative" definitions of intellectual giftedness, being gifted equates to having a significantly high IQ. Moving away from this singular definition of giftedness are authors such as H. Gardner (1992) who proposed the theory of "multiple intelligences" that corresponds to a more complex frame to measure intelligence he considers multidimensional. In this case, it is more accurate to refer to intelligences. As a result, the adoption of either conservative or liberal conceptions can be understood as a choice related to the degree of restrictiveness used in determining who is eligible for special programs and services (Renzulli, 1978[10]).

The lack of a general definition of giftedness is often criticised in the field. Most importantly, it leads to the inability to find convergence in research where models and interventions take as a starting point various interpretations (Heller-Sahlgren, 2018[5]; Carman, 2013[6]). However, from a national perspective, this enables countries to adhere to their cultural interpretations of exceptionality. In raising awareness about the influence that culture can have on understandings of giftedness, Bevan-Brown (2005[11]) for example sought to broaden New Zealand's conception of giftedness by incorporating the Maori perspective of giftedness.

However, "[t]his lack of conceptual consensus undermines identification and compromises the effectiveness of the educational intervention" (Sastre-Riba, Pérez-Sánchez and Villaverde, 2018[12]). Practitioners and policy makers are today confronted with a vast array of theoretical approaches.

1.2. A plethora of theoretical frames to identify gifted individuals

Though it is considered that the field of gifted education started with Galton's publication of *Hereditary Genius* in 1986 (Worrell et al., 2019[4]), Théodore Simon (1873-1961) and Alfred Binet (1857-1911) were the first ones in 1905 to elaborate a model aimed at measuring intelligence. Since then, researchers have conducted patient studies in order to define, measure and qualify intelligence. From the 1960s onwards, IQ tests used alone has been seen as a rather limited method – educators and psychologists then started to look into other expressions of people's cognitive capacities. A large part of the academic debate has shifted towards conceptions that encompasses many dimensions such as creativity and empathy. Considering the plethora of theories related to intelligence and giftedness, this part only focuses on some of the main authors in the field, whose models are the most widely recognised and used in identification processes. These include among others the theoretical conceptions of François Gagné, Joseph Renzulli, Robert Stenberg and Howard Gardner. However, their theories build on other authors' works and defining intelligence in itself bears a strongly subjective value related to a society's orientation and expectations.

Kaufman and Stenberg (2008[8]) identify four distinctive waves of theorisation of intelligence from the early 1900s onwards:

1. *Domain-general models*. These models focus on intelligence as a general ability that can be measured with IQ tests. The English psychologist Charles Spearman, pioneer in giftedness studies, discovered in 1905 the *g factor* (where g stands for "general intelligence"), which he identified under his own newly developed statistical technique of factor analysis. The *g factor* corresponds to a common factor encountered across all the IQ tests available at that time. According to Spearman, this factor would characterise giftedness (Spearman, 1904[13]). A decade later, in 1916, Alfred Binet and Theodore Simon developed one of the first tests to include an assessment of higher-level cognitive skills. Before Binet, starting with Galton in

the 1880s, tests were merely based on other elements such as sensory-discrimination tasks. The same year, Lewis Terman adapted Binet's scale and created the Stanford-Binet Intelligence scale, one of the first tests designed specifically to identify gifted students in schools. Terman also drew on Galton's theory of genius that considered giftedness mostly as a result of genetics (Kaufman and Sternberg, 2008[8]). According to this model, giftedness therefore equates to a higher-than-average general intelligence as defined and measured by an IQ test. It remain one of the most used across several countries (Terriot, 2018[7]).

2. *Domain-specific models*. Sharing the conviction that equating giftedness to high general intelligence was not quite accurate, another wave of psychologists began to emphasise that individuals might be gifted in different ways. One of the first authors to develop such a theory was Louis Thurstone in 1938, who used a different method factor than Spearman in order to identify primary mental abilities that he believed were statistically independent and linked to giftedness (Kaufman and Sternberg, 2008[8]). As intense debates sparked between the defendants of both approaches, researchers decided that theory alone was insufficient and began accumulating evidence in order to establish a hierarchy of factors, ranging from general intellectual abilities at the very top and separating into various more specific forms of intelligence as the hierarchy goes down. Another milestone in the field is Howard Gardner's theory of Multiple Intelligences. Gardner greatly expanded the definition of intelligence, which he considers as multidimensional, with each type of intelligence viewed as an independent cognitive system. According to this theory, seven types of intelligence have to be taken into account: linguistic; logical-mathematical; spatial; musical; bodily-kinaesthetic; interpersonal; and intrapersonal (Gardner, 1983[14]) – an individual can be gifted in one or several of them. Though this model has had a significant influence on researchers and educators' conception of intelligence, it has been widely criticised for not providing enough empirical analysis to uphold the theoretical considerations it is based on. After the use of IQ tests, it remains nonetheless one of the most common models along with Renzulli's Three-Ring-Definition.

3. *Systems models*. This "wave" of researchers on giftedness considers that it corresponds to the confluence of several psychological processes. The most prominent theory introducing this analysis is Renzulli's Three-Ring Definition that seeks to expand understandings of intelligence by defining giftedness as the interaction of three basic human traits. He distinguishes (1) above average ability; (2) task commitment/motivation; and (3) creativity (Renzulli, 1978[10]). Renzulli was among the first ones to cut off with a conceptualisation of intelligence narrowed to ability only, by acknowledging that giftedness is a potential and as such, dynamic. In other words, above-average ability is not sufficient in itself and the expression of giftedness further depends on other factors (e.g. psychological dynamics, one's environment etc.). The other main systems models theory comes from Sternberg's WICS model of giftedness. WICS stands for Wisdom, Intelligence and Creativity Synthesized, and constitutes an attempt to establish a potential common basis to identify gifted people (Sternberg, 2003[15]). In this model, giftedness is conceptualised as a synthesis of these four elements. According to Stenberg "wisdom, intelligence and creativity are sine qua non for the gifted leaders of the future. Without a synthesis of these three attributes, someone can be a decent contributor to society, and perhaps even a good one, but never a great one" (p. 112[15])

4. *Developmental models*. These models mainly emerged in reaction against the dominance of the genetic determinants of giftedness. They take into account the environment and the trajectory of an individual as crucial for the expression of giftedness. The most influential author in this category is the French psychologist Françoys Gagné, whose theory emphasises the talent-development process. Gagné proposed the Differentiated Model of Gifted and Talented (DMGT), whose main goal was to unveil the significant influence of one's environment and of non-intellective variables that transform genetically determined "gifts" into specific talents (Gagné, 1985[16]; Merrotsy, 2017[17]; Gagné, 2004[18]).

In sum, though the most extended and consensual definition of giftedness is based on superior results in recognised IQ tests, this conceptualisation is not unanimous and a significant number of researchers and practitioners have shifted towards more multidimensional understanding of what intelligence is (Terriot, 2018[7]). Such theories, and those that followed in their stead, steer away from definitions that in being narrow, conceal the power dynamics that influence decisions about the characteristics and domains associated with giftedness (Laine and Tirri, 2017[19]). This further points to the fact that giftedness and notions of intelligence reflect the needs of a society and the values of the prevailing culture within each country (Renzulli, 2016[20]; Bevan-Brown, 2011[21]; Worrell et al., 2019[4]; Heuser, Wang and Shahid, 2017[22]).

Moreover, Worrell et al. (2019[4]) distinguish models that consider giftedness as (1) ability, (2) talent development models and (3) integrative models that link both perspectives. Developmental models, such as Gagné's, have been central in shifting the conceptualisation of giftedness towards the idea of "potential". Importantly, it is based on the differentiation of "gift" and talent" that is today considered as fundamental.

1.3. Gifted or talented?

Finding a universally accepted definition of giftedness is complicated by the fact that within the literature, and particularly in national educational programmes, the label "gifted" is often trailed by "talented". The tendency to conflate the one with the other is challenged by Gagné (Gagné, 2004[18]), who makes a distinction between the two in his Differentiated Model, a model used in various countries such as in Australia (Merrotsy, 2017[17]). Gagné clarifies that while giftedness is a prerequisite for talent, gifts do not necessarily become talents- for this to occur, a child or adolescent must engage in systematic learning and practice within a supportive environment (Gagné, 1985[16]).

That the two terms are used interchangeably point to the fact that giftedness is increasingly viewed as a process subject to the environment within which it is nurtured and encouraged to thrive (Subotnik, Olszewski-Kubilius and Worrell, 2011[23]). Consequently, the transformation that occurs from the potentiality of a gift to the realisation or performance of a talent exists on a continuous spectrum, and the two concepts cannot be thought of as strict binaries. The distinction made by Gagné is nevertheless emphasised to underscore that under particular systems and teaching, potential, and the close relationship it shares with latent talent, may be undeveloped. Furthermore, it acknowledges the counterintuitive, and thus overlooked, reality that educational underachievement can become a predictable outcome for many gifted students when they are left behind (Subotnik, Olszewski-Kubilius and Worrell, 2011[23]; Mendaglio, 2013[24]).

"Potential" is therefore a word that frequently comes up in the literature. It puts pressure on education systems and schools to ensure that they actively and accurately identify these

students, and that they provide an environment in which those displaying high potential can thrive. In Singapore for example**,** parents are discouraged from entering their children in test-preparation courses for the identification exercises used to test for giftedness.[2]

The emphasis of potential is thus an important way of also combatting claims of elitism within the field, as it acknowledges the fact that some students may have access to resources that enable their potential to be identified and then realised more easily. While it may be countered that *all* students have potential, students observed to be gifted must still demonstrate an exceptionality or precocity that necessitates differentiated instruction.

This changing approach can be observed in several countries' change in denomination. In France for example**,** the term *"surdoué"*, which translates literally as "over-gifted" has been replaced with *"haut potentiel"* or "high potential" to reflect the move within the field to engage with the notion of potential and intelligence as multidimensional, dynamic and in relation to one's environment (Terriot, 2018[7]; DGESCO, 2019[25]). This shift is however still relatively latent in the identification process of gifted individuals which remain one of main challenges for academics and practitioners in the field of giftedness.

1.4. Identifying Gifted Students

The methods used to identify gifted students and the type of services and programmes implemented take as a starting point the definition of giftedness. A preoccupation with intelligence or high academic performance as indicators of giftedness means that traditionally, IQ tests like the Stanford-Binet Intelligence test have been the preferred method to identify gifted students. However, as mentioned, its use has been questioned by researchers and scholars who point towards evidence of the inadequacy of test scores as the sole indicator of giftedness. In Switzerland for instance, traditional intelligence tests are no longer used exclusively because of their acknowledged inability to capture all aspects and characteristics of giftedness (Mueller-Oppliger, 2014[26]). Consequently, expanding notions of intelligence and achievement have encouraged the use of multiple, adaptable and even more subjective methods of identification (Renzulli et al., 2005[27]).

In the absence of a commonly agreed definition of giftedness, it is up to countries, and sometimes states to elaborate their own conceptualisation of giftedness and identify who they consider the most entitled. Moreover, the definition of giftedness varies not only between but also within countries. Besides making international, and sometimes national, comparison quite impossible, this phenomenon hinders the possibility of a reliable estimation of the number of gifted students (Box 1.1). It can lead to a student being identified as gifted in a state and as non-gifted in another where it does not fit in the definition adopted, if there is one at all, and will not benefit from gifted programmes. As federal states, the United States and Canada provide examples of the issues of definition and identification.

In the United Sates, only the states of South Dakota, Massachusetts and New Hampshire do not have any official definition of giftedness. Each state as its own definition of under which students are identified and eligible for special programmes and resources are distributed. While various definitions turn out to be relatively similar, a major difference can be found in the type of intelligence(s) used to define giftedness. In other words, while

[2] See: https://www.moe.gov.sg/education/programmes/gifted-education-programme/gep-identification.

some states recognise that an individual can be gifted in exclusive areas such as sports, arts and creativity, others confined the definition to overall higher cognitive capacities. [3]

Box 1.1. How many gifted students are there?

Policy approaches to gifted education, as well as cultural and national differences in the definition of giftedness, play a crucial role in relaying information about the number of gifted students that exist in a country.

Australia, in adopting Gagne's definition of giftedness, identifies the top 10% of its students as belonging to this category (Center for Education Statistics and Evaluation, 2019[28]). This stands in contrast with States with stricter cut-off points such as in several Asian countries. In China, the percentage of gifted students are estimated to be between 1% and 3% of the total population of students (Ibata-Arens, 2012[29]). While the target number of gifted students in South Korea is 1%, figures continue to exceed this target (Cho and Suh, 2016[30]). Likewise, Singapore identifies the top 1% of its national student population as academically gifted. The Ministry of Education goes even further by also identifying exceptionally gifted students, a category that may corresponds to 3 per 100,000 children within a population that is normally distributed.[4]

According to the Mexican division of the Centro de Atención al Talento, major Latin American network working for gifted individuals, 3% (nearly one million children and adolescents) of the underage population is gifted in Mexico – meaning here that they have a score superior to 130 on IQ test.[5] Other identification methods are used in Mexican schools (UNESCO, 2004[31]) but no national guidelines or data seem to be available so far.

A working document and comparative study of 30 member countries of the Eurydice European Unit revealed that according to the estimates and criteria used in different European countries, gifted children account for 3-10% of the school population (Eurydice European Unit, 2006[32]). In Germany where there is a significant academic and political resistance to the very notion of giftedness because of its elitist connotation, Hamburg is considered to have the highest percentage of gifted students with 0.07% (Tourón and Freeman, 2017[33]). In Spain, during the 2015-2016 academic year, the Ministry Education estimated that 0.27% of the total student population was identified as gifted, which corresponds to a 15.9% increase from the previous year but remains far from the 2% aimed (Sastre-Riba, Pérez-Sánchez and Villaverde, 2018, p. 65[12]). The significant variations in legal definition and identification of giftedness prevent the development of international data systems. Nonetheless, several authors consider that a relative convergence of theoretical conceptualisation and practices is increasingly observable (Tourón and Freeman, 2017[33]) which, to a certain extent, allows for international comparison.

[3]The National Association for Gifted Children (NAGC) designed an interactive map containing all the states' different definitions. See: http://www.nagc.org/state-definitions-giftedness.

[4] See: https://www.moe.gov.sg/education/programmes/gifted-education-programme/gep-identification.

[5] See: http://www.cedat.com.mx/es/estadisticas-de-sobredotacion-en-mexico.

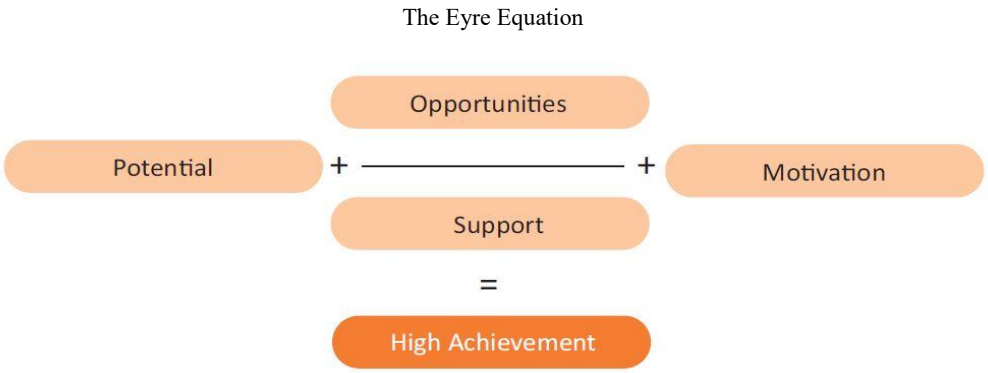
In terms of identification processes on the field, A. E. Sekowski and B. Lubianka point out the existence of four existing and non-exclusive identification methods in educational policies and practices (Sękowski and Łubianka, 2015[34]):

1. *Psychological and pedo-psychological diagnosis*, conducted by a psychologist and/specialised educators "through complex intelligence quotient assessments, administrated by professional psychologists, who provide comprehensive reports on the finite nuances of cognitive performance" (Parekh, S. Brown and Robson, 2018, p. 4[35]);
2. *Teacher nominations*, which is thought to be one of the most reliable methods as teachers spend a large amount of time with her/his students and can have an extended pedagogical experience;
3. *Parents nominations*, which constitutes a subjective help in the identification process and is usually not used alone;
4. *Peer opinion*, also not used alone, can give a quick and adequate idea of what students are the best is a domain; and
5. *Self-identification*, consisting in letting students participate in out-school educational, scientific, artistic, creative etc. activities and programmes in order to identify their motivation and potential.

Most countries use several of these methods at the same time, such as France which primarily relies on both teachers and parents' nominations (Sękowski and Łubianka, 2015[34]), following which a school board decides whether or not the student should benefit from special provision.

Authors observe that in spite of a shift towards more comprehensive definitions, identification methods ultimately still often rely on performance assessment and IQ test scores in various countries, such as the United States (McClain and Pfeiffer, 2012[36]; Worrell et al., 2019[4]). However, these tests are increasingly challenged and the multiplication of methods of identification is observable in various European countries. This phenomenon confirms the existence of a shift towards more holistic and inclusive definitions of giftedness. Figure 1.1 shows an example of a more holistic approach to the definition of giftedness. Such a definition adopts a systemic view and takes into account developmental factors necessary to transform potential into high achievement. By doing so, it acknowledges that giftedness, or potential, in itself is insufficient and that other external and internal factors are required in order to support individuals in fully developing their abilities. Furthermore, identification methods must likewise adapt to accommodate the emphasis on creativity and move away from a focus on traditional intellectual definitions of giftedness. Divergent thinking (i.e. the ability to answer open-ended questions with novel and useful responses) is increasingly regarded as the "backbone of creative assessment" (Kaufman, Plucker and Russell, 2012[37]) and has opened the door, though still marginally, to relatively new identification processes.

Figure 1.1. Recent Shift Towards a Holistic Approach to Giftedness



Source: (Eyre, 2011, p. 20[38]).

1.5. Giftedness and diversity: intersectionality of gifted students

Gifted students are not a homogenous group. Moreover, limited assessments can lead to the underrepresentation and marginalisation of groups who do not fit into the norms of those considered to be gifted. This becomes even more challenging for students whose multiple and intersecting identities lead to further disadvantage. "Intersectionality", a term coined by the lawyer and civil rights advocate Kimberle Williams Crenshaw (1991[39]), refers to the notion that the disadvantage an individual faces is shaped by several dimensions of their identity. The framework of intersectionality therefore brings to light the specific challenges and discriminations faced by groups and individuals as a result of intersecting identities. Within the sphere of education, this discrimination has an impact on the academic success and social and emotional well-being of students.

The concept of intersectionality is rarely mentioned in gifted studies and often partially studied due to difficulties in measuring it, although several authors recently proposed consistent qualitative analyses (Box 1.2). Nonetheless, it permeates the literature of gifted students, particularly in discussions about biases in issues of access and opportunity for marginalised groups in gifted programmes. These therefore align themselves with the growing salience of perspectives that maintain that giftedness is rooted in environmental factors rather than innate characteristics (Parekh, S. Brown and Robson, 2018[35]).

Most commonly addressed is the relationship between gifted education and special education needs (SEN) such as physical impairment and learning disabilities. Though students with SEN are generally underrepresented in gifted programmes, it is a subject being increasingly explored in the literature. The underrepresentation of gifted students with SEN may be impacted for example, by the stereotypic beliefs held by teachers that may lead them to have lower expectations of students with disabilities (Bianco, 2005[40]). Bianco's study on the effect on learning disability and emotional and behavioural disorder labels on the effect on teacher referrals found that teachers were more likely to "strongly agree" or "agree" to refer non-labelled students for gifted programmes than identically described students identified as having one of the aforementioned disorders.

Its prominence within the literature is demonstrated by the coinage of the term "twice exceptionality", which is used to describe gifted students with a coexisting physical impairment and/or neurological disorders (Foley-Nicpon, Assouline and Colangelo, 2013[41]). For teachers and even school psychologists, it can be difficult to detect as a

student's special education need and giftedness may mask one another, thus causing both exceptionalities to appear less extreme and potentially leading to average or below average performance (Bianco, 2005[40]; Williams King, 2005[42]). Inadequate professional development within this domain also makes detection difficult for teachers and even school psychologists. For example, a teacher's perception and knowledge of twice-exceptionality may be limited, which may lead to inappropriate referrals and placements (Mayes and Moore III, 2016[43]).

As research within this area expands, there is increasing interest in the non-cognitive effects (socio-emotional/psychological concerns) of twice-exceptionality. Twice-exceptional learners are susceptible to various challenges in their educational journey, which includes loneliness and low self-esteem as they struggle to reconcile their special education needs with their exceptionality in certain areas. Though they may possess high levels of motivation and consequently set high goals for themselves, they may nevertheless struggle to meet them because of aspects of their other SEN (Mayes and Moore III, 2016[43]; Williams King, 2005[42]; Beckmann and Minnaert, 2018[44]).

While the experiences of twice-exceptional students are receiving more attention within the field, there is still an acknowledgement that, as has been established within the sphere of gifted education in general, empirical investigation of twice-exceptionality is sparse (Foley-Nicpon, Assouline and Colangelo, 2013[41]). In their in-depth review of the non-cognitive characteristics of twice-exceptional students, Beckmann and Minnaert (2018[44]) discovered that only about 5% of articles on the subject used empirical studies.

Even within the intersection between giftedness and other SEN, further dimensions can be explored. Lovett (2013[2]) makes the case that the twice-exceptional category itself can serve as a vehicle for the elitism and social class reproduction that it seeks to overcome. In studying the intersection of race, disability and giftedness, Mayes and More (2016[43]) maintain that students who fall under this category face new and specific challenges. In fact, they are more likely to be overlooked by teachers when making recommendations for gifted peers compared to their White able-bodied peers. The complexity of this category is then deepened by the fact that African-American males are overrepresented in special education and are disproportionately represented in the disability categories, including cognitive disabilities and emotional disturbance (Mayes and Moore III, 2016[43]; Robinson, 2017[45]), so are Roma students in Europe.

Plummer (1995) estimated that culturally and linguistically diverse students are underrepresented by 30% to 70% in national gifted programmes and overrepresented by 40% to 50% in special education programmes (Harris et al., 2009[46]). Likewise, Robinson uses his "Triple Identity Theory" to explore the intersection between race, dyslexia and giftedness in the US, and proposes that the identification process for gifted learners must involve teachers using multiple data sources and culturally sensitive assessment procedures (Robinson, 2017[45]). Crucially however, what Mayes and Moore III and Robinson overlook in their framework of intersectionality is the role of gender.

Generally, there is a lack of information on the gender dimension of gifted education or the way the two dimensions of gender intersect. In combining the results of 130 studies from 1975 to 2011, Peterson (2013[47]) found that though there were differences in individual cases, on average, boys were 1.19 times more likely to be identified as gifted and included in gifted programmes. While such a figure appears to contradict the trend that girls tend to overachieve more than boys do (Freeman and Garces-Bascal, 2015[48]), Peterson was able to determine that the method of identification used greatly affected gender differences. In elementary school relied solely on grades, girls would be more likely to be identified as

gifted. Conversely, in schools where teachers were given identical student profiles of boys or girls, boys were more likely to be nominated for gifted programmes.

The discussion tends to revolve around the issue of "self-concept"- in particular the fact that girls often have poor self-perceptions and attribute their success to luck as opposed to ability. Maxwell's study (2007[49]) showed that gifted girls are particularly vulnerable to "underachieve, overextend, and succumb to personal and societal pressures" and risk becoming adult underachievers.

Box 1.2. Measuring Intersectionality in Relation to Giftedness in Toronto

In 2018, G. Parekh, R. S. Brown and K. Robson (2018[35]) conducted a quantitative analysis that examined the intersectional construction of giftedness and the academic achievement of students identified as gifted, considering racial, class and gender characteristics of students. This was possible thanks to data from Toronto District School Board (TDSB), one of the largest and most diverse school systems in Canada. Their study focused on Toronto, which they consider as one of the most multicultural cities besides having a regular day student population of just under a quarter million students.

Through the operationalisation of intersectionality in regression analysis using interaction effects, they managed to examine if the effect of an identity characteristic on one outcome of interest was different according to the level of some other characteristics. They primarily observed that gifted and high achieving students are not equally distributed amongst race, gender, and parental occupational class. They find that there is no association between giftedness and high academic achievement.

Regarding gender, there seems to be a gender bias favouring male – 60% of gifted students are male while gender distribution is equally divided. In terms of ethnic groups, black students, latinx students and South Asian students are far less represented, while East Asian students are over represented. White students are also over represented, amounting for a third of the sample but for nearly half of all students identified as gifted. In terms of the bivariate association between parental occupational class and giftedness, they observe among other elements that around half of gifted children are from relatively affluent families and less than 10% originate from the bottom two categories of the occupational classes combined.

When combining some of the variables, the authors find that the groups most likely to be identified as gifted were the White and East Asian students with a parent in high status occupation, followed by female East Asian students with a parent in a high status occupation. White female students with a similar parental occupation rank fourth. They note that "each increase in parental occupational class increased the odds of being identified as gifted by 42% and 39% for high achievers. Male students, however had a 51% increased odds over female students to be identified as gifted. - but a 53% decreased odds of being high achievers" (p. 17[35]).

Therefore, a female student from a disadvantaged background and an ethnic group (or "race") other than white or East Asian will have significantly smaller probability to be identified as gifted. This suggests subjective bias and potential discriminatory social dynamics and practices impacting the way gifted students are identified. This study highlights that one dimension of diversity taken in isolation is not enough to understand the difference of representation of different student populations in the category "gifted". Rather, dimensions of diversity intersect to create more complex identities and related

challenges and discriminations for individuals. This study shows among others that The authors further conclude that the representations – or according to their terms, "the ideology"- of giftedness and smartness shape who is identified as gifted and is entitled to programmatic and material advantages; and "[s]tarkly, these privileged bodies are infrequently racialised, female or poor" (p. 24[35]).

1.6. Why does gifted education matter? Inclusive education and societal outcomes

Besides arguments regarding the fulfilment of the right to education for all, the incorporation of social justice values and the increasing significance given to the inclusion of diversity in education have led to consider gifted education as necessary for creating equitable and inclusive systems that addresses the needs of *all* students. Therefore, among advocates for the identification of gifted students, there is a consensus over the two primary goals for ensuring the inclusion of gifted individuals in education policy: self-fulfilment and self-actualisation (Watters and Diezmann, 2003[50]; Renzulli, 2016[20]; Freeman, 2002[51]).

This argument recognises the particular learning needs of gifted students and maintains that a differentiated approach is needed to ensure that these students are able to flourish. It therefore addresses misconceptions that assume that because of their high-level abilities, gifted students do not require the same level of attention as lower-achieving students. This mind-set relinquishes teachers and school leaders from the responsibility of recognising and catering to the particular needs of gifted students, thus preventing them from realising their full potential (Moon, 2009[52]). On a larger scale, this leads to educational policies that, in the pursuit of equity, exclude gifted students from reforms meant to prioritise under-performing and disadvantaged students (Gentry, 2014[53]; Sahlgren, 2018[54]).

Studies have shown that gifted students can be significantly marginalised because, when they are not always high achievers, certain idiosyncrasies such as unpredictable behaviour are difficult to measure and traditional and extrinsic motivators do not always work for them (Yarrison, 2018[55]). "Numerous longitudinal studies on high performing adults (e.g. Nobel Prize winners) showed that they were rarely outstanding as children" – which also cast doubt on the value of early identification (Eyre, 2011, p. 18[38]) and highlights the overestimated importance of high achievement in the conception of giftedness. Therefore, not all gifted students are high achievers (and reversely), and it is believed that a number of them do not reach their full potential and can end up failing school. To address gifted students' uniqueness is therefore essential in supporting them reaching their full potential and in achieving one of the main requirements of inclusive education: the self-fulfilment and self-respect of individuals.

Another argument linked to individual outcomes of gifted students relates to the issue of dropouts. Although this topic has been widely covered for the overall student population, it is considered still inadequately addressed regarding the gifted student population (Renzulli and Park, 2002[56]) and research remains rather scarce. The literature estimates that among all dropouts, nearly 20% could be gifted students (Matthews, 2006[57]). Renzulli and Park (2002[56]) suggest that a significant number of gifted students leave school due to multiple factors including school failure, low involvement in extracurricular activities and low involvement of the parents in their education. They also found disproportionate dropouts among disadvantaged groups and ethnic minority group. Research also shows that gifted dropouts start to cognitively disengage during the elementary school years, as their learning environment becomes less stimulating. This phenomenon stresses the importance

of responding to the needs of these students in order to spark their motivation and avoid dropouts due to lack of stimulus (Koenderink and Hovinga, 2018[58]).

The second major motivation in supporting gifted individuals through education policy is the societal contributions that their development may result in. Overall, education generally translates into greater levels of civic participation such as voting and volunteering, all of which help to build safer neighbourhoods and social cohesion (OECD, 2010[59]). Moreover, data show that there are better labour market outcomes for individuals at each level of educational attainment. Individuals with higher levels of education are more likely to find employment, remain employed, learn new skills on the job, and earn more over their working life relative to those with lower levels of education (OECD, 2010[60]; OECD, 2019[61]). An education that is inclusive for all students – mostly since the pre-primary level – tends to reduce the level of school dropouts and enhance students' attainment leading to more people completing higher levels of education (Fresno et al., 2019[62]), which ensures better opportunities and participation for individuals and better labour market outcomes.

Research suggests that high performing students contribute disproportionately to countries' economic growth. It is therefore assumed that the societal reward for finding out how to stimulate gifted children to reach their full potential could be particularly significant (Sahlgren, 2018[54]; Boer, Minnaert and Kamphof, 2013[63]). Moreover, gifted students are regarded as innovators and creators of knowledge who, through the appropriate environment and development, will be able to develop solutions to challenges anticipated in the future (Watters and Diezmann, 2003[50]). A comprehensive and well-implemented gifted education could therefore "offer the possibility of cultivating a society's most promising talents into a source of exceptional human capital and creative capacity" (Heuser, Wang and Shahid, 2017, p. 4[22]).

These recent considerations mean that the inclusion of gifted students in order to improve their academic and well-being outcomes is increasingly regarded as a necessity. Though inclusion of giftedness tend to be a relatively recent topic in educational policy making, various countries have developed frameworks and initiatives aimed to support gifted students realise their potential.

Based on the OECD Strength through Diversity Project Framework (OECD, 2019[3]), the following sections of this paper will look into what policies and practices already exist in relation to gifted education, the challenges countries face and whether these policies and framework lead to inclusion.

2. The Governance of Giftedness in Education Systems

Policies mentioning special educational attention to the most talented emerged through the 20th century at different moments depending on the country.

In Europe, gifted education was already of interest in the first half of the century such as in Spain where the first legislation can be traced to the 1930's (Sastre-Riba, Pérez-Sánchez and Villaverde, 2018[12]). After the Cold War, the European Council for High Ability was created in 1987 unifying teachers and academics from the East and from the West of the continent. Less than ten years later, in 1994, the Council of Europe issued a recommendation related to the education of gifted children (Tourón and Freeman, 2017[33]), which was careful in avoiding accusation of elitism by stating that "special educational provision should (…) in no way privilege one group of children to the detriment of others" (Council of Europe, 1994, p. 1[64]).

In countries such as Mexico, the study of individuals with higher abilities emerged in the 1980s, and the first programmes started to be implemented slightly later. In fact, concrete action in favour of students with special education needs – a category in which gifted students fit– emerged with the 1994 Salamanca Declaration of UNESCO on the inclusion in education (UNESCO, 2004[31]; Ainscow, 2019[65]), though the main focus was on children with special education needs such as physical impairments (Harris and Lizardi, 2012[66]). In Australia, the academic field of gifted education is relatively new in comparison to some European countries and North America. The first educational policies for gifted children were developed in the 1970 following the 1973 Commonwealth Schools Commission Act (Luburic and Jolly, 2019[67]).

In some countries, an increase in focus on gifted education in educational policy can be partly linked to the national interests of a specific period. In the United States for instance, the first policies were developed in the 1950's in STEM (sciences, technology, engineering and mathematics) education. The goal of policy makers was to identify and train the brightest students in these fields to gain advantage in the space race with Russia, where similar dynamics could be observed in terms of gifted education (McClain and Pfeiffer, 2012[36]). A more recent example is Japan, where STEM gifted education has become an important focus in spite of the country's strong egalitarian tradition that resulted in a lack of policy in the area (Heuser, Wang and Shahid, 2017, p. 9[22]). Authors argue that in a globalised and competitive world, Japan is using gifted education to favour its national interest: defending Japanese relevance in a new world where emerging powers such as China and India have more and more weight (*Ibid.*).

Most OECD countries seem to have integrated the topic of giftedness in their educational policy. However, countries adopt contrasting approaches when it comes to the question of how to tackle the specific needs of gifted students. This section aims to understand countries' frameworks, organisation and policy orientations that govern gifted education.

2.1. Tensions and approaches in policy making related to gifted education

In many countries, the debate over gifted education often plays out between two sides. Opponents argue that special education programmes for the gifted are tailored for the selected few and undermine the principle of equal opportunity. Defendants see such programmes as a chance to identify and increase the potential of the brightest minds likely

to have a positive impact on the country's economy and social innovation. As highlighted by Heuser, Wang and Shahid, "the inevitable connotation of giftedness associated with elitism demands that the tension between equality and differentiation take the centre of analyses of gifted education policies and programs, which can lead to the intentional avoidance of formally defining and providing for gifted students in some countries" (Heuser, Wang and Shahid, 2017, p. 9[22]). Inevitably, these politico-philosophical debates lead to important questions in terms of policymaking. Among them, are (1) to what gifted individuals should be educated among equally gifted peers on the one side and attend schools with peers "average" ability on the other (Sękowski and Łubianka, 2015, p. 83[34]) and (2) how to respond to gifted students' needs without actually labelling them.

Broadly, a review of the existing literature shows that the myriad of policies surrounding the governance of gifted education can be divided into four main approaches:

1. *Policies that explicitly name and identify gifted students*. Naming and defining gifted students is regarded as a decisive move to prioritise excellence. In opposition to egalitarian approaches to gifted education, the following policies advance the notion that all individuals come into the world differentiated and that further, no one is the same. As a result, there are individual differences between learners, and the system needs to be differentiated to enhance each student's learning (Murphy and Walker, 2015[9]);
2. *Policies that promote gifted education through an egalitarian approach*. While some countries have clear legal definitions of giftedness or references in policy documents, others prefer a more egalitarian approach such as the ones adopted by Scandinavian countries. In countries with national cultures of promoting egalitarianism, education policies, and particularly those addressing the needs of high ability students, are often geared towards avoiding academic interventions that could be regarded as forms of intellectual elitism (Heuser, Wang and Shahid, 2017[22]). In attempting to address the reality of gifted students, countries in this category advance the claim that all students, irrespective of their unique or specific learning needs, need to receive individualised attention and instruction tailored to their development. Such a rhetoric fulfils the hopes of gifted education without having to name gifted children at all in their policy, approach upheld by important academics in the field such as Borland (2005[68]) and Eyre (2007[69]). The most prominent examples are Scandinavian countries where the notion of gifted can exist for administrative purposes but is not used as a label in programming and school contexts (Sękowski and Łubianka, 2015[34]; Tourón and Freeman, 2017[33]; Heuser, Wang and Shahid, 2017[22]);
3. *Policies that integrate gifted education into mainstream policies (part of subgroup)*. Countries may also choose to incorporate gifted education into existing and perhaps less controversial educational agendas. Most commonly, the particular needs of gifted students may be integrated into policies concerning special education needs education normally reserved for students with learning abilities or behavioural problems (Tirri, 1997[70]). In Spain, as early as 2002, *the Organic Law of Quality Education* (Ley Orgánica de Educación) (PL 10/2002) incorporated gifted students into those considered to have "specific educational needs". In 2007 in the Netherlands, the Dutch Advisory Council for Education identified highly gifted students as one of the groups in need of potential support to reach their full potential because of their propensity to be less motivated. (Thijs, Leeuwen and Zandbergen, 2009[71]). As a result, this leads to educational policies such as

"dealing with differences" and "personalised learning" that promote differentiated instruction;

4. *Policies that approach gifted education policy as a separate and specific policy measure*. As an example, South Korea set up new education institutions for gifted education. These included gifted high schools (specialised schools with autonomous curricula not subject to state regulation), gifted centres, and departments for gifted education. The importance of these specific measures were reinforced by legal requirements such as Article 19 of the Fundamentals of Education Act 1997 (Gifted and Talented Education), which maintains: *"State and local governments shall carry out and establish policies for educating children who have exceptional abilities in fields such as the academic, artistic or athletic"*. The number of students participating in gifted education increased from 19,974 to 121, 433 between 2003 and 2013 and the number of institutions offering gifted education increased from 400 to 2,868 in that same period (Lee, Kang and Lee, 2016[72]) (Korean Educational Development Institute, 2013[73]). It should be noted that these are predominately schools for students gifted in *science* or *maths* - though recently, the country is expanding notions of giftedness to include the creative arts.

While all four approaches delineate different responses to giftedness, they do not necessarily work in isolation from one another; nor do national policies fall neatly into these categories. Though policies that actively seek to identify gifted students may also advocate and provide guidelines for separate specific measures, this is not always the case. Likewise, egalitarian policy approaches that entail differentiated instruction may employ special measures for gifted students such as pull-out classes at the school level.

A unifying component is that all four approaches advance the notion that meeting the needs of gifted students entails the provision of differentiated instruction. They may nonetheless differ in whether education follows the principles of inclusion and equity, which depends on broader educational goals and frameworks developed by countries over time.

2.2. Administrative entities and regulatory frameworks

At the system level, responsibility for gifted education is typically spread out across ministries and national institutions. These automatically include ministries of education, though special governmental bodies can be involved such as inter-ministerial agencies. In Austria for example, the administering actors for gifted education are the Federal Ministry for Education, Art and Culture; the Federal Ministry of Science and Research; and the Austrian Research and Support Centre for the Gifted and the Talented (Heuser, Wang and Shahid, 2017[22]). The latter is financed by the state and has the mandate to initiate gifted education, thus making it unique in Europe (Resch, 2014[74]). It does not work in isolation. Realising its limitation, and that the provision of separate measures such as counselling sessions or special classes put less pressures on schools and teachers in general to cater for the needs of their gifted students *within* classrooms, it develops strategies at the national and regional levels. This occurs for example, with the Ministry of Education and Women's Affairs, and the Ministry of Sciences, Research and Economy. Moreover, the ÖZBF operates in the middle of two other levels: the ministries and then the Federal Coordination Points, where the president of the Provincial School Governments appoints a coordinator for talent support (Nagy and Zsilavecz, 2011[75]).

In some countries, though a national definition might exist, subnational authorities are in charge of identifying, designing and implementing plans for gifted students. In Canada for example, the delivery of educational services for gifted students is subject to the regulations and ministerial directives of individual provincial and territorial jurisdictions (Lupart et al., 2005[76]). Consequently, local district boards have their own protocols and procedures for identifying gifted students - which therefore means that while a child may be identified as gifted by one district board, they may not be in another. While this regulatory framework enables provinces to be responsive to their community context, Lupart et al, nevertheless maintain that its disadvantage is that it leads to variability in practices (*Ibid.*).

As mentioned earlier, another example can be found in the United States, where each subnational administration has its own definition of giftedness. This leads to significant variations in the methods of identification, curricular provisions and out-of-school activities designed for the gifted. In Spain, the autonomous communities are responsible for implementing identification programmes and interventions for gifted students, but they follow common national guidelines (Sastre-Riba, Pérez-Sánchez and Villaverde, 2018[12]). Conversely, Switzerland lacks a national strategy, but all cantons have their own policies for identifying and cultivating giftedness (Heuser, Wang and Shahid, 2017, p. 20[22]).

In countries where there is no legal definition and/or limited references to giftedness in policy frameworks, non-governmental actors tend to have a crucial role in the provision of educational services and programmes to gifted individuals. In Mexico for example, in spite of a recent focus on gifted students,[6] private institutions, advocacy groups and associations are the main actors in the identification of and programming for gifted students (Harris and Lizardi, 2012[66]; Heuser, Wang and Shahid, 2017[22]). In Germany, though almost all German states explicitly include gifted education in their education status, non-governmental actors play the main role in the provision of educational services for gifted students (Heuser, Wang and Shahid, 2017[22]).

Therefore, the governance of gifted education varies significantly across countries, depending on the type of national policies that govern it and the type of administrative structuration. While on one hand, the governance of gifted education can be entrenched at the state level, on the other hand, policies can also operate through a system of increased decentralisation, with the state providing guidelines that can be interpreted at the provincial or school level. Some countries such as Portugal do not have any legal reference to gifted students but have recently developed a comprehensive legal and political framework putting inclusive education as a priority. In such frameworks, giftedness can be interpreted as a dimension of diversity and a special education need requiring specific provisions. Other countries nonetheless still lack a concise framework, and consequently, leave a certain vacuum around gifted education.

[6] The article 41 of the General Education Law of 1993 (Ley General de Educación [LGE]) modified in 2009 and enforced in 2010 stipulates that special education is directed towards individuals with SEN (permanent or transitory) as well as those with "gifted skills". The Secretariat of Education also published guidelines and identified that 0.07% of the students population was receiving services through the a national programmes called the Model of Attention of Children and Adolescents with Gifted Skills, *Modelo de Atención a Niños y Jóvenes con Capacidades y Aptitudes Sobresalientes* [CAS] implemented in the 1990's (Harris and Lizardi, 2012, pp. 190-192[66]).

2.3. School choice and special provision: between egalitarian aspirations and specific needs of gifted students

Even within the wider education system, there is wide debate about the efficacy and desirability of school choice. Nonetheless, such debates occur against the general agreement and belief that the individual needs of students vary (Subotnik and Rayhack, 2007[77]). In particular, inclusive education takes as its starting point that what may be right for one student is not necessarily right for another, and that education systems must accommodate this reality. School choice however, becomes even more of a controversial issue when paired with gifted education because of the aforementioned concerns regarding elitist practices and lack of equitable access to gifted programmes (Eyre, 2011[38]; Heuser, Wang and Shahid, 2017[22]).

As more and more countries give attention to gifted students in national legal frameworks and curriculum policies, an ongoing question has naturally been whether and to what extend gifted students should be reserved a specific educational provision. While some countries are concerned about undermining egalitarian values, others consider that gifted education can positively affect both individual and societal outcomes. Advocates for school choice in gifted education, such as the use of selective schools, maintain that they provide social and emotional benefits for gifted students and can help them reach their full potential, which will ultimately benefit society (see section 1.6). Importantly, they can provide students with the opportunity to learn alongside like-minded peers in a supportive environment that accepts and celebrates their high ability and talents (NSW Department of Education, 2018[78]; Eyre, 2012[79])

Different settings are available for students identified as gifted in both public and private school. Most often, countries opt for differentiated pedagogies and curriculum changes within schools. Both governments and national gifted associations implement programmes in and out of school destined to boost gifted students' potential and respond to some of their socio-emotional necessities while favouring contact with other students. Recently however, some countries have put gifted education among educational priorities and have implemented selective schools aimed at gathering gifted students from different geographical locations and helping them reach their full potential (Box 2.1).

According to different studies, some of the most efficient educational provisions for gifted students seems to be school summer camps and differentiate pedagogy as part of an enrichment strategy (Kim, 2016[80]; H. Wu, 2013[81]; Heller-Sahlgren, 2018[5]). A 2006 study in South California used longitudinal data from North Carolina to investigate high-school dropout rates among gifted students who had participated in a regional talent search programme as seventh graders. Results indicated that dropout rates among this particular gifted population were extremely low. (Matthews, 2006[57]). Some countries choose to have special schools for gifted students in specific domains, most often arts and sports. In Poland, for example, gifted students can choose specialised schools supported by the Ministry of Education or/and the Ministry of Culture in music, visual arts, ballet or sports (Limont, 2012[82]).

Box 2.1. Selective Schools for Gifted Students in New South Wales and Victoria, Australia

Australian policy context: increasing emphasis on gifted education

Although there is a certain focus on gifted education in Australia since the 1980-1990's, governmental studies conducted at the beginning of the century showed important gaps in gifted education provisions. Several measures were then taken. However, authors observed that they did not translate into significant changes, and pointed out the lack of a national policy and programme to provide funding to ensure the efficacy of gifted education policies.

Recently however, the 2018 curriculum started to emphasise opportunities to address all students' needs, acknowledging their diversity, including the needs of gifted and talented students. Educational authorities in each state have their own definition and policies related to giftedness and usually emphasise both academic outcomes and student's well-being. Though special provision for gifted students is not new, the 2018 national curriculum has encouraged states to give a fresh impulse to gifted education.

Moreover, there is an increasing concern about the lack of equity among academics and policy makers. Indigenous and low socio-economic background students are underrepresented in gifted programmes, and boys are overrepresented over girls. States' policies and initiatives are increasingly putting equity as a priority.

New South Wales selective schools for gifted students

In New South Wales (NSW), different selective high schools[7] offer choice to gifted and talented students and their parents as part of an equitable public education school system. These schools select learners together and teach them in specialised ways. The different types available include fully selective high schools, agricultural high schools, partially selective high schools and art schools such as the Conservatorium High School.

Additionally, the state also makes available "opportunity" classes at the primary school level for academically gifted students that parents usually apply for when their children are in grade 4. The goal of these classes is to ensure the learning development of gifted students by grouping them with peers of the same ability and using specialised teaching methods and educational materials. As of March 2019, there were 76 primary schools[8] with opportunity classes. It is estimated that 80,000 gifted public school students across New South Wales will be identified and extended under a new high-potential programme to be launched from 2021.[9]

Gifted education in Victoria

In 2012, Victoria conducted a new *Inquiry into the education of gifted and talented students*. At the conclusion of this inquiry, the Committee determined that "gifted students need to be specifically catered for as a matter of equity" and developed a set of policies that have shaped provisions for gifted and talented students in Victoria. Moreover, Victoria's Department of Education considers that gifted students require additional education needs to which schools must adapt.

Provisions for gifted and talented students in Victorian schools include acceleration, high ability grouping, differentiation, enrichment, among others. Similarly to NSW, selective schools are available, mainly focusing on math, science, technology, dance, music, and visual arts. Furthermore, the Department of Education funded several research on education

in order to identify how to better respond to gifted students' needs, which involved the design of a new development programme for teachers.

Sources: (NSW Department of Education, 2018[78]; Kronborg and Cornejo-Araya, 2018[83]; Walsh and Jolly, 2018[84])

Nonetheless, the existence of selective schools and services for gifted student (coupled with open school choice policies) raises significant concerns, mainly regarding school segregation. For example, a 2010 study measured the effects of a new policy related to school choice in Stockholm. Before 2000, students were assigned to their nearest school, but from the fall of 2000, students could apply to any school within Stockholm and admission decisions became solely based on grades. The authors found that the new admission policy increased segregation by ability. Segregation by family background, and especially segregation between immigrants and natives, also increased significantly (Söderström and Uusitalo, 2010[85]). This phenomenon is of particular concern when it comes to gifted education. As some countries allow for separate provisions and admission decisions bases on grades, opponents to gifted education are concerned about the emergence of elitist schools and exclusionary practices.

2.4. Resourcing gifted education

State funding for gifted education varies according to the national support for appropriate programming and interventions. When designating resources to gifted education, there is generally an effort to distribute in a way that retains principles of equity (and aims of access) by targeting socially disadvantaged gifted learners.

Kettler, Russell & Puryear (2015[86]) determined that though issues of equity and access are increasingly addressed within research literature on identification and participation practices, less attention is/has been given to how educational opportunities are distributed after students are identified for gifted services. They found that there were differences in the funding and staffing of gifted education based on locale: rural school districts in Texas spent less per pupil on gifted students and less on the operations for gifted education and the faculty allocation for its services.

The school budget that is the basis for the education of all students is used to fund the education of gifted students. Authors from North America and Australia identified that there tend to be limited or no additional funding to develop gifted programmes. As a result, teachers are often not prepared to teach gifted students and principals often do not receive any extra funding to support gifted students' education, issues that substantially impacts the quality of gifted programmes (Kronborg and Cornejo-Araya, 2018[83]; Callahan, Moon and Oh, 2017[87]). Similar issues have been identified in Europe (Tourón and Freeman, 2017[33]).

In the United States for example, where gifted education takes a backseat to prioritise policies such as "No Child Left Behind", the federal government does not provide funding

[7] See: https://education.nsw.gov.au/public-schools/selective-high-schools-and-opportunity-classes/year-7/what-are-selective-high-schools.

[8] See: https://education.nsw.gov.au/public-schools/selective-high-schools-and-opportunity-classes/year-5/what-are-opportunity-classes.

[9] See: https://www.smh.com.au/education/plan-to-help-state-s-gifted-students-thrive-20190607-p51vnx.html.

directly to local school districts for services targeted to gifted students. This issue may result in a lack of funding for certain schools and raise concerns of equity. There does exist however, the Jacob K. Javits Gifted and Talented Students Education Act (1998), which focuses on identifying and catering to students traditionally under-represented in gifted programs i.e. minority students, students from low income backgrounds or who are English language learners, and children with disabilities. This act, which in 2018 received $12 million (€10.9 million) in federal funds, operates within an egalitarian framework that seeks to reduce gaps in achievement and promote equality of educational opportunities.[10] More widely, the Javits Act reflects the tendency for resources for gifted education, where they do exist, to be targeted to disadvantaged groups.

The United Kingdom's "Excellence in Cities" initiative sought to target gifted students from inner-city schools in disadvantaged areas (urban schools with high levels of social and economic deprivation). Consequently, resources allocated to Local Education Authorities (LEAs) and their schools depended on their level of disadvantage (with the percentage of pupils receiving free school meals used as an indicator of low family income): this ranged from £50 per pupil in more advantaged schools, to around £140 per pupil for the least advantaged schools (Machin, McNally and Meghir, 2007[88]; Koshy, Smith and Brown, 2017[89]). This programme operates within the awareness that geography plays an important role in the academic access and the ability of students to realise latent talents. For example in targeting urban areas, it acknowledges that gifted students may "have been hibernating in social situations, given neither recognition nor encouragement" (Casey, Portman Smith and Koshy, 2011[90]). Such a policy is now reflected in Ireland, where the fee-based Irish Centre for Talented Youth (CTYI) operates alongside the Delivering Equality of Opportunity in School policy, and thus subsidises talented students, scoring in the top 5% of SAT test scores, from designated disadvantaged schools (Cross, Cross and O'Reilly, 2018[91]).

State-funded resources for gifted education can be managed by localities and schools depending on their needs, but can also be attributed towards targeted and specific intervention. In February 2019 for example, New Zealand's Ministry of Education announced a NZ$1.27million (€731.962) package to support gifted and talented education by funding one-day schools, and providing awards, events and out of school experiences for gifted learners. Moreover, the package also seeks to provide additional guidance for teachers and *kaiako* (teacher in Māori) to help them identify and support gifted learners.[11]

Furthermore, a tendency towards a decentralised approach in some countries means that districts, provinces or municipalities take control of funding, thus leading to heterogeneity in the amount allocated to schools. In Austria, the nine different provinces can make a decision about the funds they wish to allocate to gifted education, thus leading to resource differences among them. Consequently, whereas one province may have one coordinator – the minimum advised according to existing guidelines- another province may choose to invest a considerable amount of Euros in gifted education (Resch, 2014[74]). While this may be useful in providing districts and schools with more autonomy in a way that reflects the diversity within their particular area, it is also likely to lead to an urban/rural divide (Stahl, 2014[92])

[10] See: https://www.nagc.org/resources-publications/resources-university-professionals/jacob-javits-gifted-talented-students.

[11] See: https://www.beehive.govt.nz/release/new-support-package-gifted-learners.

3. Challenges and Policies Approaches to Build Capacities in Gifted Education

The effectiveness of inclusion and equity in education relies to a considerable extent on ensuring that educational authorities and stakeholders possess the right skills and competencies. In this sense, capacity development within a system plays a key role in supporting diversity and inclusion. Awareness, professional development and preparation of students regarding the topic of gifted education are essential elements to enhance gifted students' academic and well-being outcomes and promote their inclusion in educations systems.

As systems become more inclusive, professional development is crucial so that school teachers are able to face new challenges to respond to more diverse student needs (UNESCO, 2017[93]). Continuous professional development is an important tool to ensure that practicing teachers can respond to students' individual needs and promote inclusive education building upon the knowledge and skills acquired in initial teacher education programmes (OECD, 2019[94]). Therefore, it is important that initial teacher education includes specific training to develop competencies and skills for ensuring that classrooms and schools are equitable and inclusive for all learners, including gifted students.

Overall, there is growing consensus in the literature on (1) the crucial role of educational staff, in particular teachers, in the academic success and well-being of gifted students and (2) the specific needs giftedness implies in terms educational support. Nonetheless, gifted students tend to be neglected in some areas such as career counselling strategies, which again stems from the idea that gifted students do not need much support due to higher-than-average abilities.

This section aims to identify the main challenges related to capacity building in gifted education and how they are addressed by countries. Precisely, it focuses on how awareness can be raised on giftedness at the system level, teachers' preparation, career and educational guidance and mentoring strategies to support gifted learners through their educational journey.

3.1. Raising awareness on giftedness at the system level

Myths and misconceptions surrounding giftedness and gifted learners highlight the importance of raising awareness on the benefits of gifted education and its contribution to inclusive education system more generally. Numerous national, regional and international organisations seek to raise awareness and deconstruct the assumptions that surround the field. Such organisations are important in facilitating research and providing resources and materials that are beneficial for schools, school leaders, teachers, parents and communities. In countries where gifted education is not or no longer recognised in the state education system, these organisations can be essential in providing services for gifted students who may otherwise be overlooked within their schools and classrooms.

The United States National Association for Gifted Children (NAGC) support and develop policies that respond to the diversity of gifted and talented students. The charity supports and engages in research utilised by a range of stakeholders and further support professional development, advocacy, communication and collaboration with other relevant organisations. In the United Kingdom, Potential Plus UK became the key national

organisation to offer support for gifted and talented students following the demise of the gifted education policy in 2010.

Likewise, a significant number of other countries have national associations that provide services, research and guidelines to support policy makers and practitioners in defining, identifying and responding to the educational needs of gifted students. In Portugal for instance, the Associação Nacional Estudo e Intervação na sobredotação (ANEIS) [National Association Study and Intervention in Giftedness] released in 2017 a comprehensive report aimed to fill gaps in knowledge on giftedness guide educational staff to promote the inclusion of gifted students (ANEIS, 2017[95]). Some governments also developed their own guidelines in partnership with academics. Under its new orientation towards inclusive education, the French Ministry recently published a guide on how to deal with gifted education (DGESCO, 2019[25]).

International entities have also worked on raising awareness on giftedness. The World Council on Gifted and Talented Children[12] is a worldwide advocate for gifted children that holds a biennial World Conference that provides the opportunity for educators, researchers, parents, psychologists and others interested in gifted education to share their experience, knowledge and information on gifted students. The European Council for High Ability[13] enables the coordination of most European countries and seeks to act as network that promotes the exchange of information among educators, researchers, psychologists, parents and all those interested in high ability, including high ability students themselves.

In various countries, attempts to generate national awareness of giftedness are undertaken through days or weeks dedicated to the field. In 2011 and 2013 Ireland, the national Gifted Education Awareness Week[14] initiative was created by the Gifted and Talented Ireland and promoted through Gifted and Talented Network Ireland. The aim of the week is to "dispel some of the myths and misconceptions surrounding gifted education and raise awareness of the resources available to teachers through the internet". It also aims to open a dialogue between parents and teachers. Similarly, in New Zealand; the theme of the New Zealand Gifted Awareness Blog Tour 2019 organised by the New Zealand Centre for Gifted Education was on "Mythbusting". The Blog Tour enables individuals to share their experiences, stories and views about giftedness- ranging from whether it is being a gifted learner themselves or raising, teaching or counselling a gifted student.[15] Australia also has a Gifted Awareness Week founded and led by the Australian Association for the Education of the Gifted and Talented organisation to "raise awareness of the identification, support and learning needs of gifted children and to celebrate the dedication of individuals and educational bodies who are making a positive difference in the lives of gifted children and their families.[16]

3.2. Teacher training: policy approaches and initiatives to enhance teacher professional development

Continuous professional development is an important tool to ensure that practicing teachers can respond to students' individual needs and promote inclusive education building upon

[12] See: https://www.world-gifted.org/.
[13] See: https://www.echa.info/.
[14] See: http://gtnetwork.ie/geaw-2013/.
[15] See: https://nzcge.co.nz/blog.
[16] See: http://gaw.aaegt.net.au/.

the knowledge and skills acquired in initial teacher education programmes (OECD, 2019[94]). Developing the capacity of teachers and school staff to address the needs of gifted students is a core policy lever to promote inclusive education policies and practices, especially when acknowledging that special education needs, category in which gifted students might be found, remain the most needed topic for continuous professional development by teachers across OECD countries (*Ibid*.).

Teachers' beliefs, practices and attitudes are important for understanding and improving educational processes. They are closely linked to teachers' strategies for coping with challenges in their daily professional life and to their general well-being, and they shape students' learning environment and influence student motivation and achievement (OECD, 2009[96]). Teachers are also essential actors in shaping students' engagement, drive and self-beliefs (OECD, 2013[97]).

A recurring theme in the literature on gifted education is that teachers, and in particular their attitudes, will and training, have the most profound influences on the educational development and psychological well-being of gifted students, as well as the advancement of gifted education within their schools (Rowan and Townend, 2016[98]; Fraser-Seeto, 2013[99]; Boer, Minnaert and Kamphof, 2013[63]; Lassig, 2009[100]; Riley and Bicknell, 2013[101]). Similarly, teachers' perceptions, stereotypes and prejudices also plays a substantial role in decisions on who gets to be identified as gifted; consequently feeding into issues surrounding the underrepresentation of certain groups. For example, a study identified low expectations of minority students or those from low socio-economic backgrounds from teachers as a significant barrier in their entry to gifted and talented programmes (Casey, Portman Smith and Koshy, 2011[90]).

Despite the acknowledged importance of teachers, there nevertheless exists a paucity of professional development opportunities for them to improve their approach to and ease with gifted programming. For example, the Gifted Education in Europe Survey (GEES), undertaken in 2015 to take stock of existing educational provisions for gifted students, found that 68.92% of the teachers that responded had not experienced any special training even though opportunities were made available to them (Tourón and Freeman, 2017[33]). Overall, the literature emphasises that some of the most prevalent challenges "faced by those education systems that committed to gifted education include inadequate teacher preparation and lack of resources for working with gifted learners" (Heuser, Wang and Shahid, 2017, p. 10[22]).

However, studies show quite contrasting findings in relation to teachers' attitudes towards gifted education. Regarding co-education for instance, Polyzopoulou et al. (2014[102]) found that teachers tended to see it rather negatively. They however also found that some studies in other countries suggested that teachers did not see it as a problem at all, and even as positive in improving all students' performance (*Ibid.*).

Greater training of teachers leads to more positive attitudes towards gifted programmes (Lassig, 2009[100]).Conversely, the lack of services for teachers must also contend with, and arguably leads to, the negative attitudes of teachers who view gifted education policies as elitist and exclusionary or merely useless. Issues regarding the implementation of gifted education policies can be significantly linked to the resistance from teachers who tend to express unease with the selection process, or objected to the labelling of specific students as gifted (Koshy, Smith and Casey, 2018[103]). Moreover, the lack of preparation of teachers become even more of a challenge, when they must deal with the cultural and/or socio-economic differences/dimensions of gifted students (Gómez-Arizaga, Conejeros-Solar and Martin, 2016[104]).

Non-governmental organisations tend to have a significant role in the preparation of teacher for gifted education. For example, in order to counter the lack of teaching development programmes in Europe, a "Specialist in Gifted Education" degree awarded by the European Council for High Ability (ECHA) was proposed in Europe (Weilguny et al., 2013[105]). In the Netherlands, this degree is made available at the bachelor and master's levels by the Centre for the Study of Giftedness of Radboud University Nijmegen. This programme sits alongside a broad range of courses for teaching gifted students, which also includes seminars organised by individual trainers and private practitioners (Boer, Minnaert and Kamphof, 2013[63]).

In the United States NAGC and the Council for Exceptional Children (CEC) created national standards in gifted education programming services and for teacher preparation. These standards cover topics such as knowledge and skills for teachers and teacher preparation programmes that help teachers not only adequately identify gifted students but also ensure that these students are provided with relevant, meaningful and challenging learning experiences (NAGC, 2013[106]). Among other requirements, these standards call on teachers to "recognize the learning differences, developmental milestones, and cognitive/affective characteristics of gifted and talented students, including those from diverse cultural and linguistic backgrounds, and identify their related academic and social-emotional needs".

Various countries have developed policies and initiatives aimed at enhancing teachers' preparation in order to respond to the need of gifted students. Depending on whether giftedness is clearly established in national regulations, they might opt for different approaches ranging from targeted policy for professional development in gifted education to broader inclusive policies aimed to strengthen teachers' capacity to adapt their pedagogy depending on students' needs – without necessarily referring to giftedness as such. The following paragraphs provide some examples of these different approaches.

In several countries, ministries, with the help of associations, have developed standards establishing essential knowledge and skills that teachers need to acquire to be effective in teaching gifted students (Kronborg and Cornejo-Araya, 2018[83]). These standards aim at enhancing teaching quality for all teachers and give them the confidence to efficiently implement guidelines and programs for gifted students at the school.

Moreover, bachelor and master degrees and training courses might be offered to teachers that enable them to nurture and ensure the development gifted students. In Finland for instance, while capacity building may appear difficult given the absence of gifted students in education policies, Finnish teachers are considered well-equipped. This is as a result of all teachers receiving academic professional training within which an educational programme of differentiated instruction is the standard from kindergarten on (Tirri and Kuusisto, 2013[107]). Consequently, teachers are already conscious of how to tailor the curriculum and instruction to the particular needs of gifted students. In some contexts however, teachers tend to receive very limited instruction on differentiated education and/or may not implement it because of a lack of support or interest in the broader educational environment (Dixon et al., 2014[108]).

Finally, some countries have clear legal reference to teacher preparation for gifted education. In South Korea for example**,** the preparation of teachers is codified in the Gifted Education Promotion Act of South Korea. Article 12 (1) maintains "the state and local government shall provide education and training to improve quality of teachers in charge of gifted education on a regular basis. The National Training Institute, established in 2009, "drives and coordinates professional development for teachers and educators. Their

capacity is built through graduate courses and in-service training courses. Basic training involves 60 hours that cover courses that include understanding gifted education and identifying gifted and talented students. More intensive training, which involves 120 hours, goes more in-depth and covers subjects such as teaching and evaluating methods and the development of programmes.[17]

A growing body of research suggests that teacher education for inclusion plays a key role in the process of deep change towards inclusion in schools, though lack of consistent implementation of inclusion principles remain a common issue across countries (Alves, 2019[109]). In this sense, a comprehensive professional preparation related to giftedness coupled with an ongoing training on inclusive practices should significantly enhance both academic and well-being outcomes of gifted students.

3.3. Career and educational guidance for gifted individuals: transition through and after the education system

Well-designed transitions programmes are essential elements of inclusive education systems. More broadly, comparative studies have shown that OECD policy orientations have stressed the need to improve the existence, diversity, relevance and transparency of different pathways, and the need to integrate them into a lifelong learning perspective, while protecting those left most vulnerable as others advance to further education and employment (OECD, 2012[110]).

In the specific case of gifted students, research has identified that transitions programmes can significantly support gifted students if they take into account and adapt to their needs. As an example, Benson (2009[111]) observed that dropouts were higher where transitions practices were fewer. Although various countries have long established comprehensive transition programmes involving educational staff and older students, these programmes seem to lack inclusivity, i.e. they can prove to be inadequate to some groups of students. According to the literature, gifted students' specific needs often seem to be left out. In this context, educational staff have to adopt strategies to respond to this particular issue (Box 3.1).

Generally, there is a lack of research on whether and how giftedness changes across different levels of education. Likewise, few studies have explored how entry into gifted programs change students over time (Delacourt, Cornell and Goldberg, 2007[112]). In those that exist, the focus has been on the transition to university/higher education- considered to be an educational milestone that places unique demands and challenges on students.

The lack of attention payed to transitions is a substantial challenge considering that unsuccessful transitions can have negative consequences on the academic achievements and psychological well-being of gifted students. For example, Mendaglio (2013[24]), who emphasises the absence of research in this domain, found that while gifted students face similar challenges to the rest of the average student population, they tend to confront a different set of psychological demands due to giftedness itself. More specifically, they are more likely to face higher level of anxiety and loss of confidence, which can results in underachievement and loss of motivation.

[17] See: http://gifted.kedi.re.kr/khome/gifted/gedEng/teaching.do.

Also dismantling the myth that high ability students do not face problems and challenges, Moon (2009[52]) explains how the problems experienced by gifted students change in the transition between their elementary and secondary school levels. In line with Mendaglio's findings, Moon maintains that at the elementary school level, challenges faced by high-ability students tend to do with their educational environment and the development of industriousness: when gifted children are placed in classes without differentiated instruction and adapted solely to learners of average or lower ability, they develop maladaptive beliefs that distort the relationship between ability and effort. Later on in life, this makes it difficult for them to engage in the hard work required to turn raw ability into fully honed talents. While students at the secondary level face similar problems when they are not met with appropriate challenges, by this level however, it becomes less of an issue because of the more challenging nature of the curriculum.

Although there has been a growing concern for the socio-emotional needs and challenges of gifted learners, a lack of attention has been given to their career development (Greene, 2005[113]). Adhering to Gagne's model, Greene maintains that career counselling is a necessary aspect of talent development and that it must be it infused into educational and socio-emotional support as part of a life-long process.

Box 3.1. Taking into Account Gifted Students' Specificity in Transition Programmes to High School

Melvin B. Belson, high school teacher in the United States, conducted an "action research project" looking into middle school students transitioning to high school with a special focus on students identified as gifted. The study was conducted between 2007 and 2009.

Belson found that these adolescents, around 14 years of age, all experience similar anxiety issues and confusion in relation to the work overload and new expectations. He observed that gifted students experienced similar level of social and physical anxiety. However, his study suggests that they need special attention for two reasons: they tend to not be considered at risk because of common view on giftedness and to experience anxiety in a specific way due to the gifted element.

Based on these observations, Belson offers a method to aid gifted students in transitioning from middle school to high school in the form of peer-to-peer/student-to-student talking. In recognition of the fact that the advice of teachers may sometimes go unheeded by students, he held a panel discussion where eighth graders about to transition to high school had the opportunity to listen to ninth graders talk about their experiences and exchange questions and advice. Later, he conducted a survey of the 8th graders who had participated in the discussion during the fall semester of their ninth grade year, and the panel discussion with the high school students ranked as the most useful activity in aiding their transition.

Though this method can be replicated to all students, it might be of particular interests for gifted students. It allows to access life stories of individuals with a similar experience and provides gifted students with a support understanding of their needs. In this sense, peer to peer mentoring seems to be a highly efficient method in enhancing students' readiness for transition and reducing related anxiety.

Sources: (Benson, 2009[111])

In sum, in spite of significant progress in the understanding of how adolescents take decisions in relation to their future career, there is still little research in this topic regarding students with high abilities. Existing research seems however to suggest that these students may have different decision process and require special support in relation to counselling and guidance (Jung, 2017[114]; Kerr and Sodano, 2003[115]). When it comes to career development, gifted learners seem again "plagued" with the notion that because they show high abilities in certain areas, their careers while naturally unfold successfully. In this regard, gifted girls are particularly vulnerable to "underachieve, overextend, and succumb to personal and societal pressures" and risk becoming adult underachievers (Maxwell, 2007[49]). To tackle this issue, the literature further emphasises the need to focus on the inclusion of giftedness in teacher professional development. Teachers can have a decisive role as mediators, even mentors, regarding gifted students' career decision making (Watters, 2010[116]).

3.4. Mentoring strategies to support gifted students' academic and well-being outcomes

As mentioned, little support is often provided in developing gifted student's talents. According to common belief, gifted students will simply learn on their own and will adapt to education systems. Less common, however, is the consideration that education systems must adapt to gifted students' needs and provide special support to ease their inclusion in the school. Like any other students, they do need to be accompanied in reaching their potential and finding their academic and career path.

Various studies have documented the positive effects of mentoring on gifted students. Mentoring programmes are particularly advised by academics and practitioners because they tend to significantly contribute to improve gifted students' motivation, self-worth and achievement, and help develop positive adult relationships (Ball, 2018[117]). In this sense, mentoring can be an effective practice to promote the inclusion of gifted students.

According to the literature, there seem to be three main mentoring strategies likely to have beneficial effects on gifted students academic and well-being outcomes:

1. *Teacher-student mentoring*. One of the most common and informal form of mentoring is the relationship between a teacher and his students as the latter often look to their teachers for advice, direction, and assistance in learning (Bisland, 2001[118]). This kind of mentoring can be found at every level of schooling and at the university, mostly for newly arrived students.
2. *Student-expert mentoring*. This strategy might involve a university expert or a practitioner and take the shape of a more formal programme. It is often an academic expert mentoring a secondary or high school gifted student in a specific field. For instance, the Malaysian PERMATApintar National Gifted Center proposes a mentorship programme that focuses on developing students' capacity to undertake academic research by pairing them with a university professor who guides them in research in their field of interest (Bakar, 2017[119])
3. *Mentoring with an older student*. This type of mentoring where a younger gifted student talks about career decision and transition with an older student seems to be a highly efficient strategy to reduce transition tensions (Benson, 2009[111]). Moreover, it proved to have a particularly positive effect on gifted minority students who can be more isolated than others (Bisland, 2001[118]).

There is no one-size-fits-all solution, that is, no suscribed mentoring programme right for every child or school. Rather, each student will benefit more from one type of mentoring or another, or from the association of several strategies. To be efficient, a mentorship programme has to be consistently implemented, with a strong commitment from the participants and the presence of an adult supervising it in the case of an older student mentoring a younger one.

Finally, while mentorship programmes often focus on short-term role-modeling, long-run programmes have shown the most positive impact on gifted students' both achievement and well-being. For example, the Catalyst Programme developed by the American Psychological Association involves long-term commitments that connects students with important members of the field and provide emotional support (Subotnik et al., 2010[120]). The programme enables gifted learners to be continuously challenged and develop certain psychological skills. Learners are also encouraged and helped to challenge their teachers' ideas with their own. In providing young gifted learners with such skills, the programme thus acknowledges that while some students may be socially and emotionally resilient on their own, others, on the other hand, and perhaps a majority, may require psychological support to cope with challenging and competitive environments.

4. Importance of School-level Interventions to Promote the inclusion of Gifted Students

The literature identified that some of the main conditions necessary for the successful implementation of gifted education policy are: *local capacity* (matching resources with school, expertise of teachers and quality of curriculum) and *will* (attitudes, motivation, and beliefs of stakeholders) that exist in the community surrounding a local school (Long, Barnett and Rogers, 2015[121]). School-level interventions thus play a pivotal role in realising the aims of the policies created at the governmental level. These interventions tend to follow on directly from the country's gifted education policy.

However, in countries with a decentralised system, policies implemented at the local level crucially differ. A qualitative study of 10 government secondary schools in New South Wales, Australia, found that schools that created a gifted policy document themselves, were more likely to provide substantial scope and quality to their gifted programmes, even if these documents were not completely aligned with state policy (Long, Barnett and Rogers, 2015[121]).

As such, it is clear that while national inclusive policies are central to the creation and sustenance of gifted programmes, their implementation lies critically at the school level. Consequently, promoting school level interventions to support diversity, inclusion and equity while ensuring that schools have resources they need is highly important.

This section identifies practices, opportunities and challenges related to gifted education at the school level. More specifically, it focuses on teaching and learning strategies implemented to respond to gifted learners' needs, the organisation of their learning time and space and how parents and communities can be involved in gifted education programming.

4.1. Learning strategies to address giftedness: differentiated pedagogy and curriculum adjustments

Countries that give attention to gifted education emphasise the necessity of special educational provision adaptation of the pedagogy to respond to the specific needs of gifted students. In France for example, the Education Act clearly refers to gifted students (as "*élèves intellectuellement précoces*") and requires that special measures and equipment are provided to support these students in reaching their full potential (DGESCO, 2019[25]). Even in countries where a clear legal framework regarding this issue is lacking, gifted education tend to follow the same pattern, that is, a differentiated approach corresponding to adjustments of the curriculum and special educational provisions.

Ultimately, however, it is within classrooms that the aims of a differentiated curriculum are realised. In reflection of the idea that gifted students are not a homogenous group, there are pedagogical variations in how differentiated education strategies are carried out so that both the academic and socio-emotional needs of gifted learners are met. The final goal is "ensuring the holistic development of students' identity" (Bakar, 2016[122]). Regarding the specificity induced by giftedness, such strategies must go beyond traditional approaches to teaching.

The (adaptation of the) curriculum is considered to be at the heart of gifted education, and the fundamental issue that policies and schools must confront when ensuring that gifted learners are able to have a differentiated and holistic learning experience (Eyre, 2012[79]). In the face of growing diversity, it is important that policy makers contend with how to make sure curriculums are mindful of, meet and promote the linguistic, academic, cultural, and economic diversity of gifted learners and all students more generally. A quality curriculum is therefore one that is beneficial for all gifted learners, including from underrepresented groups, and which recognises that gifted students are not a homogenous group and do not necessarily display exceptionality, potential or talent in all subject domains (Callahan, Moon and Oh, 2017[87]).

In order to respond to diversity, gifted education programmes are most often based on a differential pedagogy, also merely called differentiation (ANEIS, 2017, p. 41[95]; Eyre, 2012[79]). This notion refers to educational strategies corresponding to a flexible education that adapts to the personal students' individual cognitive and psycho-social characteristics.

Therefore, all school-level approaches to gifted programming involve differentiation. Such approaches expect teachers to recognise the different learning abilities of students and to respond appropriately according to students' individual needs (Lawrence-Brown, 2004[123]). Moreover, differentiation is regarded as essential both to enhance the academic development of gifted students and to prevent the development of interpersonal challenges for gifted children (Beljan et al., 2006[124]). Table 4.1 below provides a general comparison between approaches based on traditional pedagogy and those based on differentiated pedagogy.

Table 4.1. Traditional Pedagogy v. Differential Pedagogy

Traditional Pedagogy	Differential Pedagogy
Differences are not acknowledged, there is intervention when issues become significantly obvious;	Differences between students are studied and constitute the point of departure of the pedagogical project;
A general comprehension of students' intelligence is predominant;	The multiple forms of intelligence are recognised;
There is a simple definition of excellence in school;	Excellence is defined mostly from the individual evolution in relation with a previous stage;
Students' interests are sometimes taken into account;	Students are frequently solicited in order to base the teaching on their interests and motivations;
Teaching/learning follows the idea of respecting a manual and a curriculum;	Teaching/learning takes into account the availability, interests and profiles of the students;
Teaching/learning is focused on contents and activities not necessarily linked to context;	Teaching/learning is focused on the acquisition of essential skills, in order to value and understand the concepts and relevant knowledge;
In and out of class tasks provide with one option only;	Various options are available for in and out of class tasks;
Time management is relatively flexible;	Time is managed in a flexible way, in accordance with the students' needs;
The work is mostly based on written texts;	There are diversified teaching/learning material;
Facts and ideas tend to have one interpretation;	Facts and ideas tend to have various possible interpretations;

Traditional Pedagogy	Differential Pedagogy
The teacher guides the student's behaviour;	The teacher promotes the acquisition of an autonomous learning ability;
The teacher solves the problems;	Students help their classmates and the teacher to solve the problem;
Students assessment is done mostly at the end in order to verify what they understood ;	Students' assessment is continue and re-assessed in order to adapt the teaching to the students' needs;
Classification is standardised;	The teacher negotiates with the students, defining individual learning goals for the whole class;
One type of assessment is used.	The teacher negotiates with the students, defining individual learning goals for the whole class;

Note: This table, from the Portuguese National Association Study and Intervention in Gifted Education (*Associação Nacional Estudo e Intervação na Sobredotação*) was translated from Portuguese to English by the author.
Source: (ANEIS, 2017, p. 43[95]).

A 2015 study showed that less structured teaching methods coupled with enrichment models tend to raise performance among gifted children. The authors devised a randomised experiment with gifted pupils from more than 200 different American classrooms. The students would have access to instructional units in poetry and research skills for a full scholar year. The studies showed that a rich curriculum and responsive instruction driven by key components of three existing curricular and instructional models, is a viable option to enhance students' learning (Callahan et al., 2015[125]).

Differentiation can have significant benefits for different groups of students. In fact, though some academics argue that children perform better with more structured and rigid teaching methods, a growing body of research has shown that higher autonomy, participation and individualised teaching methods can be highly beneficial for numerous students, and particularly for gifted individuals (Heller-Sahlgren, 2018[5]).

Two main strategies are used in order to support them in reaching their full potential: acceleration and enrichment. While enrichment is considered as a "horizontal" extension of the curriculum, where learning activities provide depth and breadth in accordance to the child's abilities and needs, acceleration rather adopts a "vertical" extension of the curriculum, and involves the early introduction of content and skills or a quickening of the pace of delivery and response.

4.2. Enrichment and acceleration strategies to respond to the needs of gifted students

Acceleration strategies

Traditionally – mainly in the early years of gifted education – acceleration has been the most common method. It can be defined as "an educational intervention based on the mastery of higher grade-level knowledge than typical grade-level content or speeding up the pace of the material presented" (Kim, 2016, p. 103[80]). In other words, this strategy consists in providing a student with a curricular programme at a faster rhythm or at a younger age than her/his peers.

Acceleration is justified by the fact that the teaching rhythm might be too slow for gifted students and demotivates them, issue likely to put some students in a situation of emotional and motivational vulnerability likely to increase through time and grade (ANEIS, 2017, p. 52[95]). The goal of such a strategy is therefore to provide a student with a curriculum

reaching a level of complexity in adequacy with her/his higher than average abilities and skills.

The research on acceleration is ambiguous. Although curriculum acceleration is a widely used practice judged efficient by some researchers, it has become increasingly controversial. Typically, acceleration includes grade-skipping, early entrance to kindergarten, school or college in order to provide with an advanced instruction more likely to respond to the student's ability or potential. Because grade skipping used alone does not necessary involve a differentiated pedagogy, it can be only partially a differentiation strategy. In this sense, acceleration tends to be seen as limited for inclusion purposes.

Consequently, there is a growing resistance to this practice by academics, parents. Particularly, various teachers argue that it has a negative impact on gifted student's socio-emotional well-being and create issues of adaptation and isolation; ultimately, acceleration may have more negative than positive outcomes for gifted students (H. Wu, 2013[81]).

Enrichment strategies

Enrichment "refers to richer and more varied educational experiences, a curriculum that is modified to provide greater depth and breadth than is generally provided" (H. Wu, 2013, p. 2[81]). Among the various practices in gifted education, enrichment strategies are the most used after acceleration ones. Such methods aim to broaden classroom activities and curriculum, and to include more material and information that is not in regular classroom study. For example, enrichment opportunities can be offered through intensive courses at universities, like the University of Tampere in Finland, which accepts high school students showing exceptionality and talent in Maths and Physics (Tirri and Kuusisto, 2013[107]).

According to Renzulli and Reis (1997[126]), enrichment should follow a set of 12 principles, among which the consideration that every learner is unique, that learning is more meaningful when students like what they are doing, are stimulated and face concrete challenges, and are confronted to a variety of cognitive areas. Enrichment is also aimed at cultivating (1) concrete skills such as research, communication and teamwork abilities and (2) positive socio-emotional behaviours such as the development of a social and ethical consciousness. Ultimately, the goal of such a strategy is to support the gifted in developing her/his talents and ability to their maximum, i.e. reaching their full potential, the latter seen as progressive and multidimensional.

In a recent literature review on effective policies and practices in gifted education, G. Heller-Sahlgren found that enrichment of the curriculum in and out of class tend to have positive impact on gifted students. It seems to work especially well when combined with targeted/individualised instruction (Heller-Sahlgren, 2018, p. 27[5]). A growing body of research and educators consider enrichment as the most preferable strategy. While grouping students together in enrichment programmes, in or out of school, seems to have the most significant positive impact in terms of academic achievement, combining them with an academic year programme in mixed classes has a further positive effect on gifted students socio-emotional well-being (Kim, 2016[80]). Table 4.2 provides a comparison of the main advantages and disadvantages of enrichment and acceleration strategies.

Table 4.2. Main Advantages and Disadvantages of Enrichment v. Acceleration

	Enrichment	Acceleration
Advantages	• May be easier for the administration because it does not require class skipping; • The student mostly stays with peers of her/his age; • Seems to favour a positive socio-emotional impact; • Has a positive impact on gifted students motivation; • Flexibility that makes it easier to adapt to students' needs.	• Allows the student identified as gifted to have a curriculum adapted to his ability and be challenged; • Has a significant positive impact on individual academic performance; • Can have a positive impact on motivation.
Disadvantages	• Requires significant knowledge of giftedness from teachers and other educators, therefore it implies important investment in capacity building for educational staff.	• Mere class skipping may be insufficient for some gifted students; • It is estimated that it does not have a positive impact on students' socio-emotional well-being (being older peers can create isolation situation for example); • According to teachers, it has more negative outcomes than positive ones; • Increasingly controversial.

Sources: (Kim, 2016[80]; Sastre-Riba, Pérez-Sánchez and Villaverde, 2018[12]; Renzulli and Reis, 1997[126]; H. Wu, 2013[81]).

While there tends to be a preference for one or another, increasingly, the two are being used collaboratively. Hong Kong for example, reflected to have one of the most developed gifted education policies among Beijing, Chinese Taipei, Korea, Japan and Singapore, adopts a myriad of approaches to school level provision which includes advancement/acceleration (early admission and grade skipping), enrichment and pull-out programmes (Ibata-Arens, 2012[29]). While gifted students are unnamed in Finland's educational policies, at the school level, acceleration in the form of grade-skipping, ungraded systems and subject matter acceleration are used to cater to their particular needs (Tirri and Kuusisto, 2013[107]; Laine and Tirri, 2016[127]).

Another example stems from Austria, where acceleration is a "strategy" codified by the law. Since 1974, the School Education Act has enabled gifted and talented students to skip grades, or, since 2006 skip school levels- with the criterion however, being that nine years of schooling must be completed (Weilguny et al., 2013[128]). At the writing of this review, national implementations for a "new upper level scheme"[18] is to be introduced to academic secondary schools (AHS), secondary technical and vocational schools (BMS) and colleges

[18] See: https://eacea.ec.europa.eu/national-policies/eurydice/content/national-reforms-school-education-1_en.

for higher vocational education (BHS) to "increase the intensity of the learning/studying process, which will provide an improved overview of individual learning deficits". One of the key elements of this reform is the development of a package for gifted students able to complete syllabus areas before other students.

Finally, acceleration and enrichment programmes are not necessarily used exclusively and can be combined depending on the context, resources and needs of each students. These strategies can also work alongside other methods such as ability or cluster grouping and pull-out programmes and their implementation is intimately linked to the organisation of gifted students' learning time and space.

4.3. Organisation of learning time and space of gifted students

Within the literature, there is debate about what organisation could cater to the academic and general well-being of gifted learners. This debate is sustained because of the lack of vigorous empirical research about what approaches or models work best, and is further compounded by national differences in gifted education. Approaches can fall into two categories; (1) separate, or special, classes and (2) integrated, or mixed ability classes. They share a foundation in differentiated teaching methods (Siegle, 2013[129]).

On one side, there are advocates for separate/additional class times for gifted students. This follows from the aforementioned idea that high ability learners in regular classrooms are left unchallenged and unmotivated, which can be a major contribution to their underachievement (Laine and Tirri, 2017[19]; Moon, 2009[52]). As such, responses to these issues include isolationist or "pull-out" methods in which selected students are taken out of their regular classrooms for specified amount of times for accelerated/enrichment learning is one of the most common programmes. A significant body of research agrees that the separate classroom method might enable gifted learners to work with similar ability peers, leads to greater academic achievement and, by enabling time with mix-ability classrooms, has a positive effect on the social development of students (Reis and Renzulli, 2010[130]; Rogers, 2007[131]).

To be a viable option, they must bring together students for a substantial amount of time during the school week (*Ibid.)*. VanTassel-Baska (2017[132]) for example, maintains that a minimum of two hours per week of group learning with other gifted students of equal or higher ability is essential in ensuring the authentic learning of the gifted. Renzulli (1987[133]) explains that pull out programmes work particularly in conditions where the regular curriculum undergoes systematic modifications, and are better suited to the elementary school level as opposed to the secondary school level.

Using My Class Activities as an instrument to investigate the perceptions of gifted elementary students in South Korea**,** Yang, Gentry & Choi (2012[134]) were able to determine that gifted students who attended pull-out programmes that consisted of two, three hour sessions throughout the semester, experienced higher levels of interest, enjoyment and challenge from these programmes than they did from their regular classrooms. Acknowledged limitations of this study however, was the lack of detailed information about the students' demographic, and thus the inability to determine whether, for example, gifted students from low-economic backgrounds have access to such pull-out programmes.

Besides concerns in terms of equity raised by pulled-out strategies, authors also pointed out their potential "Big-Fish-Little-Pond effect."[19] They suggest indeed a careful use of this classroom strategy because research indicates that academic self-concept is negatively affected when students of high ability are too often grouped in homogenous high-ability classes, rather than mixed-ability classes (Mendaglio, 2013[24]).

Other strategies include the use of "cluster grouping." This is usually used in mixed ability classes where students identified as gifted may be gathered and receive a differentiate instruction while being included in the "mainstream" classroom. Despite variations in its definitions and applications as reflected in particular models such as the "School-wide Cluster Grouping Model" (SCGM) and "Total School Cluster Grouping (TSCG), this method retains three key elements (Gentry, 2014[53]):

- Groups of students identified as gifted are placed in classrooms consisting of students with different levels of achievements;
- Teachers differentiate the curriculum and instruction for the high-achieving students in the clustered classroom; and
- Successful teachers have an interest or background in working with gifted students.

Though the aim of cluster grouping is specifically aim to realise the potential of gifted students, their integration with students of mixed abilities is such that heterogeneous classes become the norm. Such a strategy allows all students to have the opportunity to work according to their own challenges through the aid of teachers trained to create differentiated learning environments (Brulles and Winebrenner, 2018[135]). It is moreover regarded that grouping gifted learners through approaches such as cluster groupings, pull-out classes, special classes can be very effective when paired with a differentiated curriculum (VanTassel-Baska, 2017[132]).

Teachers can choose to resort to the diversification of teaching materials and cooperative learning techniques in order to enhance all students' interest and potential while keeping them included in the same classroom as other students. Such methods can be efficient not only for gifted students, but also for all students in the same class (Box 4.1).

Box 4.1. Using Cooperative Learning Techniques to Promote Inclusion: the Jigsaw Classroom

What is the Jigsaw classroom?

The Jigsaw classroom is a method developed in Texas in the 1970s by Elliot Aronson. In this teaching/learning method, each student is seen as an essential piece of a puzzle. First, students have to be placed in groups that respect the class diversity. The method contains several steps the teacher has to follow, steps through which students are asked to solve a problem as a group. Each student is given a "segment" of the day lesson and, as such, each individual has essential knowledge that, through collaboration, will help lead the whole group to the end of the exercise. The teacher also designates a leader for each group and

[19] For an overview of this notion, see for example Stanford University Graduate School of Education 2018 online article: https://ed.stanford.edu/news/stanford-education-study-provides-new-evidence-big-fish-little-pond-effect-students-globally.

has to be prepared to intervene in case one or several students would manifest inappropriate behaviours. [20]

This technique is used as a way to foster critical thinking, collaboration, communication, and creativity skills in the classroom. It is moreover considered to be an efficient strategy for differentiating instruction to meet the needs of diverse learners.

Application of the Jigsaw method to mixed classrooms with gifted students: Example from a French secondary school

César Franck de Palaiseau is a French pilot secondary school where programmes based on differentiated pedagogy are implemented to respond to the needs of gifted learners and improve the quality of education for the whole class. The project began in 2012. The school welcomed 650 students, including 12% gifted students, some with physical impairments, and an Upe2a[21] until 2014, which constituted a highly diverse environment. The project aimed at establishing alternative pedagogy to foster the inclusion of all students, without targeting one specific groups in isolation.

In this schools, the students identified as gifted can access to:

1. Enrichment strategies where gifted students have access to a higher class (*décloisonnement* in French): gifted students, if they are bored and in advance, are allowed to go to a higher class or even to the nearest high school if it is possible. Some even present science projects in a university;
2. Differentiated assessment: instead of evaluating with grades, they evaluate skills, without grades;
3. Adapted schedule; and
4. Differentiated pedagogy within the classroom: a teacher mixes student profiles and create activities that enhance solidarity and allow each one to work on her/his weaknesses.

A biology teacher has been using differentiated teaching methods in an attempt to include all students in her diverse classroom. Besides technology, she often uses the Jigsaw method, which she refers to as her favourite one. What she observed, for instance, is that gifted students do not want to share much with others or lose time. However, they have to explain to those who do not understand if they want to achieve as a team. As a result, it stimulates them by creating a new challenge and allows everyone to understand the issue at stake.[22] Overall, she identified that this method gives significant results in terms of students' motivation and participation.

[20] See: https://www.jigsaw.org/#overview.

[21] An Upe2a, pedagogical unity for newly arrived non-French speakers, are special classes with students considered to have special education needs because of low competences in the national language and/or a significant delay in educational attainment. Students usually stay in such a class for around a scholar year and receive classes both in special settings and in mainstream classrooms.

[22] The author accessed the information on the school during an international seminar on giftedness organised at the Université Paris-Descartes on 20 June 2019.

4.4. Engagement with parents and communities

Research has shown that the involvement of parents and communities in the learning process of their children plays a prominent role in their overall success and well-being in schools. Precisely, differences in parenting practices are strongly associated with differences in children's developmental and educational achievements; reviews of international evidence on parental involvement showed that "good parenting has a significant impact on children's achievement and adjustment, evident across all social classes and all ethnic groups" (Koshy, Smith and Brown, 2017[89]). Increasingly, school-family partnerships and community-centred approaches are recognised as highly efficient in supporting students and help them achieve their potential (Matthews and Menna, 2003[136]; OECD, 2019[137]).

Parents have first a central role in the early identification of a child's giftedness. Parent awareness of the behaviours that indicate high potential is an important element of policies related to gifted education (Sękowski and Łubianka, 2015[34]). The earlier an individual is identified as gifted, the earlier the school system can adapt to her/his needs. Therefore, at the school-level, parents should be encouraged to participate/engage in the identification process (and nomination) of gifted students.

Second, gifted students are likely to underachieve and lose motivation when the school does not respond to their needs. There are numerous gifted students who "continually experience failure at school while successfully learning and creating at home, where they can put extended effort into their hobbies and interests. Developing a collaborative relationship between parents and teachers will also facilitate productive intervention strategies" (Williams King, 2005[42]).

Parents most often show interest in supporting their child when s/he is identified as gifted, and in knowing more about her/his special educational needs (Bicknell, 2014[138]; Koshy, Smith and Brown, 2017[89]; Wellisch, 2020[139]). Furthermore, parents can be pillars in gifted education when they receive relevant information and resources. She conducted a case study with 15 children ages 10 to 13 to study parents' recognition of and involvement in their gifted children's adapted math education. She found that these particular parents, whose children were chosen by their school as being gifted and talented in mathematics, served as motivators, resource providers, monitors, content advisors, and learning advisors altogether (Bicknell, 2014[138]).

Some countries have already considered parental involvement as an important element for the success of gifted programmes. In England for instance, parents' involvement used to be a core component of such programmes (Box 4.2). In New Zealand, parents, caregivers and whanau are encouraged to be involved in decisions regarding students' education.[23] Ministries of education can also provide guidelines not only for teachers, but also for parents to understand how to identify and where to ask support if they think child is gifted. As an illustration, Austria developed tools such as the multidimensional talent support kit that includes guidelines for support-orientated counselling talks between teachers, parents and students. Overall, it "brings together teachers, parents and the respective students in round-table talks and hence allows for personalised form of gifted education", while also ensuring that all perspectives/views are incorporated in the process (Stahl, 2014[92])

[23] See: https://www.ero.govt.nz/publications/partners-in-learning-good-practice/successful-engagement-good-practice/.

Box 4.2. Involving Parents in Gifted Programmes in the United Kingdom

Policy context

Following from its 1997 White Paper commitment to making effective provision for high-ability pupils, the English government between launched three major policy initiatives 1999 and 2010. There aimed to enhance identification, participation and access to labour market for all gifted students.

The programme

In this context, a university-based intervention programme was implemented at Brunel university. The intervention programme was designed to address some of the main challenges encountered in gifted education in the countries, as well as to support the implementation of the government 'gifted and talented' education policy requirements with its associated aims of raising academic achievement and creating higher expectations and aspirations for the future.

Among other activities and actions, parents' days and workshops were organised to develop parents' knowledge on issues such as higher education and opportunities available to them through national initiatives. During the workshops, parents worked alongside students with the presence of school staff members.

Importance of parental involvement

Researchers identified parents' involvement in their gifted child education as one of the main outcomes of this programmes. Moreover, parents of 'gifted and talented' children from lower income families face some particular challenges. Studies on the experience and perspectives of parents of children identified as gifted and talented refer to a *master adult triad* of teacher, parent and mentor to support gifted students from low-income families. Overall, parents found that the programme was useful in filling gaps in knowledge regarding gifted education and creating bonds within family and in the neighbourhood.

Sources: (Casey, Portman Smith and Koshy, 2011[90]; Koshy, Smith and Brown, 2017[89]).

Therefore, there is consensus in the literature on the importance of combined efforts of parents, the school, and the community in nurturing gifted children. Consistent and continuous involvement of parents is key. Some good practices for parents can be to (i) create support groups to share parenting experiences; (ii) explore online and local learning resources to educate themselves about giftedness and nurture their children; and (iii) identify mentors in the community or other parents who can support in meeting the educational needs of these children (Manasawala and Desai, 2019[140]).

4.5. Using technology to foster the inclusion of gifted students

Several international agencies such as the European Agency for Special Needs and Inclusive Education have stressed the potential of technology in fostering inclusion in school (European Agency for Special Needs and Inclusive Education, 2013[141]). Technology is increasingly acknowledged as a vital tool in enabling teachers to more easily provide differentiated instruction and act as a creative and cognitive stimulator for students (Periathiruvadi and Rinn, 2012[142]). Some authors even argue that a well-structured use of

technology in the classroom can "proliferate learning" and, in certain case, is likely to contribute to better student performance (Mashhadi and Kargozari, 2011[143]). Gifted students could benefit from a greater use of ICT not only to strengthen networks and monitoring, but also to foster learning within the classroom.

Though more research is needed, a growing literature suggests that access to technology may have a significant impact on the development of talent within the learning environment. Using strategies based on technology can contribute to promote student cognition, regulation of learning, and creativity, and prevent talent loss on the long run (Baylor, 2019[144]). Technology, used in and outside the classroom, might be a significant support in facilitating the talent development of all students and help them reach their full potential.

The wealth of information that can be assessed online can also provide the perfect opportunity to gain more knowledge by themselves and go beyond the limited flow of information they are able to get from a teacher, who, in traditional settings, are regarded as the main source of information. As such, it relieves the burden of teachers, and greatly aids them in meeting the needs of gifted students, particularly in differentiated classrooms with students of mixed ability.

Defendants of such an approach argue moreover that the ideal classroom for gifted learners is a borderless one, where they can have access to relevant information and the kind of intellectual stimuli they require according to their higher-than-average ability. Technology can therefore help teachers to "expand the classroom beyond its four walls" (Bakar, 2016[122]). When it allows such openness and support activities that align with "real-world" applications, the use of technology in the classroom can also contribute to enhancing gifted student's motivation (Housand and Housand, 2012[145]).

In Malaysia for example, the Universiti Kebangsaan tried a "digital classroom" approach – an innovative technique using integration of information and communication technology (ICT) – used at the "laboratory school" of National Gifted Centre, as teaching and learning strategy for local gifted students. Teachers integrate ICTs in the classroom and make use of four main tools: (1) social media applications such as Facebook, Whatsapp, Twitter, Instagram and more to enable students to communicate with a range of actors; (2) online learning portals including Massive Open Online Course (MOOC) and the Khan Academy Portal that give students access to a range of course offered by universities around the world; (3) emails; and (4) an interactive communication platforms where students can continuously share knowledge and debate with older peers and experts (Bakar, 2016[122]).

Furthermore, technology can help reduce the gap in access to education for disadvantaged gifted students. For example, Belcastro's study (2002[146]) identified the potential for technology to deliver essential services for gifted students in rural areas in the United States where barriers of access, insufficient transmission of information and inadequate teacher preparation may be a problem**.** As such, free learning portals can be essential for gifted learners from low socio-economic backgrounds or rural areas who would otherwise be unable to access such courses and learning opportunities. In some cases however, while the access to such advanced programmes on learning portal is highly valued by students, they miss the "interpersonal" social interaction considered necessary to their well-being (Center for Education Statistics and Evaluation, 2019, p. 12[28]).

Nonetheless, both access to and the use of technology is linked to students' social, economic and cultural background and, if not well regulated and monitored, it can further contribute to divides between advantaged and disadvantaged students (Hooft Graafland, 2018[147]). Consequently, an increase in the use of technology, in order to benefit all students' outcomes, should be accompanied by consistent equity and inclusion policies and ongoing research on its impact on all student's outcomes.

5. Moving towards Inclusive Education for all Gifted Students: Policy Gaps and Opportunities

Deborah Eyre (2011[38]) explains that educational policy approaches directed at gifted individuals changed with the broader social and scientific understanding of giftedness. While from the early to mid-20th century gifted education focused on a small group of individuals seen as hereditary gifted (Unique Individual paradigm), the mid to late 20th century saw a shift towards the Cohort Paradigm, under which gifted education selected a group of students amongst the general school population, mostly through IQ test. Since the end of the 20th and beginning of the 21st century however, the focus has shifted from identification towards creating the educational conditions in which giftedness might best be developed, also referred to as the "Human Capital paradigm".

In spite of still significant gaps in research on gifted education and a lack of internationally agreed definitions, various countries have – and several still are – focused on giftedness as an area of interest in educational policy. As policy initiatives and civil society's projects mentioned in this paper show, responding to gifted students' specific needs has been an important concern, though not always for the same reasons. Some countries such as France or Portugal are currently making significant efforts towards more inclusive educational policies and practices where the entire school system needs to respond to challenges and opportunities raised by increasing diversity. In this context, one can argue that a shift in the field of gifted education towards more inclusive practices aiming to promote gifted learning for all students has emerged (Lo et al., 2019[148])

Nonetheless, the field of gifted education remains a challenging one. This section aims to identify some of the main policy gaps and opportunities regarding the inclusion of gifted students. Among other elements, monitoring and evaluation, the identification of disadvantaged groups, gifted students' well-being and the use of technology in the classroom seem to be important areas that require further focus to enable the inclusion of all gifted learners in education systems.

5.1. Strengthening evaluation and monitoring of gifted education programmes

Effective evaluation, monitoring and on-going attention is essential to ensure that the implementation of gifted education occurs in a way that reflects the aims of the policies and models being employed (VanTassel-Baska, 2017[132]; Callahan, Moon and Oh, 2017[87]). A recurring theme within the literature is the weakness and lack of evaluation and empirical research on what type of educational interventions work and why, and whether there is a causality between gifted programmes and the overall success of gifted students (Parekh, S. Brown and Robson, 2018[35]). Such weaknesses may be attributed to several factors, including inadequacies in the evaluation skills of teachers and schools, lack of time and funding, inadequate programming and a lack of significance given to the issue in educational policy priorities (Riley and Moltzen, 2010[149]; Resch, 2014[74]). However, criticisms of the weakness of current evaluation policies must contend with the general acknowledgement that in reality, a one-size-fits-all approach does not work with the development, implementation and evaluation of gifted programmes.

Gallagher (2006[150]) distinguishes between two types of programme evaluation: summative, in which data is collected for external purposes e.g. for funding agencies, put

an emphasis on outputs, and can thus be a great determinant of the future and existence of the programme. In contrast, formative evaluations are conducted for the purposes of the administrators and staff within the programme, and seeks to determine whether it is effective and how it may be improved. In light of competing resources within education systems in general, evaluations can be crucial in ensuring the survival of gifted education and various interventions within it.

In existing evaluation initiatives, there is a desire to approach evaluation holistically, to take into account all the needs of gifted students. The aim of the evaluation of Hong Kong's "Pilot School-based Programme for Academically Gifted Children", was not just to establish whether the programme had improved the academic achievement of students, but rather to determine whether it had broadened the scope of students' learning, motivated them to learn on their own, developed their creativity and thinking, increased their problem solving skills and had an impact on their emotions and interpersonal relations (Education Department, 1999[151]).

In New Zealand, the lack of national and international evaluation materials leads to a lack of standards with which to access the scope and quality of gifted program provisions in selective, partially selective, and comprehensive government secondary schools (Long, Barnett and Rogers, 2015[121]). Nevertheless, their existing evaluation programmes in education more widely seek to take into account the cultural diversity of its students by monitoring whether programmes are bicultural and embody Maori perspectives and values. Consequently, evaluations of Talent Development Initiatives developed between 2003 and 2005, and then from 2006 to 2008, had among its benchmarks and quality indicators the cultural appropriateness and relevance of the gifted programmes developed under the initiatives, their ability to meet the social and emotional needs of students, and their capacity to effectively target low-decile or rural schools (Riley and Moltzen, 2010[149]).

At the school-level interventions and programmes are often critiqued for failing to provide concrete evidence on their specific effect and benefit for gifted students. According to Sahlgren (2018[54]), research on the effects of gifted education programmes have not been rigorous or conclusive enough to be used for policy purposes. Nevertheless, though the lack of concrete research may undermine both the efficacy and the need for gifted education provisions, Sahlgren was able to identify that gifted students do indeed require different types of instruction than non-gifted students in order to flourish.[24] Nonetheless, his critique highlights the importance of promoting and ensuring greater evaluative practices across all policy levels.

In this context, non-governmental actors are again important actors in evaluation and monitoring processes for gifted education. A prominent example is the NAGC in the United States, who provides guidelines for the use of "multiple, appropriate and ongoing assessments" to determine the learning progress and outcomes of diverse gifted learners, and in a way that enables all students to demonstrate their gifts and talents (NAGC, 2010[152]). Moreover, they encourage the use of pre, post, performance-based, product-based, and out-of-level assessments as a means to differentiate school curriculums and instruction. This issues however seems to be a bigger concern in primary schools than at the other levels of schooling in the country. In a survey of 1,566 school districts across the United States, Callahan, Moon & Oh (2017[87]) found that whereas only 8% of elementary respondents used students learning outcomes for programme modifications,

[24] See: https://www.aasa.org/content.aspx?id=17446.

95% of middle high school respondents and 69.2% of high school respondents used outcome data for curriculum, instruction and professional development modifications.

Evaluation and assessment is a crucial aspect of gifted education. On one hand it is vital in monitoring the learning and progress of gifted students, and on the other, it can shed light on the effectiveness of teachers, schools and school systems in ensuring the overall well-being of their students (Cao, Jung and Lee, 2017[153]). Assessment within the field of gifted education is often viewed in relation to the issue of identification alone. A significant challenge for education systems is therefore to go beyond a narrow focus on identification to likewise ensure the continuous assessment of the progress of gifted student once they have been identified. Doing so can ensure that evaluation and assessments can become an important bridge between different components of gifted education such as identification, learning and development, curriculum planning and programme delivery.

5.2. Considering the effect of definition on the identification of disadvantaged groups

The use of different forms of identification methods has been particularly important for scholars concerned with the exclusion and/or underrepresentation of certain students from gifted programmes. There is particular concern about out-dated identification methods for the underrepresentation of certain groups such as those from ethnic minority groups and low socio-economic backgrounds, in enrichment and acceleration programmes (Casey, Portman Smith and Koshy, 2011[90]; Pfeiffer, 2012[154]; Worrell et al., 2019[4]; Center for Education Statistics and Evaluation, 2019[28]).

According to Callahan's research (2005[155]) on the identification of gifted students from underrepresented populations (i.e. minorities, children from low-economic status environments, students with limited knowledge of the native language), a series of interrelated factors such as inherent bias and oversimplified assessments placed the researched groups at a severe disadvantage. Additionally, Ford (2010[156]), in acknowledging the underrepresentation of Black and Hispanic students in gifted education in the United States, maintains that two key barriers are stagnant and outdated policies and procedures for labelling and placement, and students' differential performance on traditional intelligence and achievement tests. In particular, she highlights the specific disadvantage faced by Black and Hispanic male students who are more underrepresented than any other group. In previous works, Ford likewise found that while the use of IQ tests by some American states tended to benefit white middle class pupils, it was detrimental to those from ethnic minorities who would perform less well on paper tests or who might have different cognitive styles (2002) (Mayes and Moore III, 2016[43]). Critically, therefore, giftedness represents a juncture where other dimensions of diversity and broader contexts of socio-economic status can and do meet.

In New South Wales, Australia a review of selective schools for gifted and talented students found that unintended barriers may deter some gifted students, and notably Aboriginal students, students with disability, and rural and remote students, from sitting selective tests (NSW Department of Education, 2018[78]). The review also highlighted the shortcomings of the test design of school assessment processes in acting as a further barrier in the identification of the aforementioned groups. In order to overcome this, the action plan included move to ensure that entry into selective schools is based on ability and not background.

The role that socio-economic status and class plays is also an issue addressed in the literature. A study by Turkheimer and his colleagues (2003[157]) revealed that aside from

the general and known shortcomings of IQ tests as a measure of intelligence, they pose an even greater problem for children from impoverished families. Likewise, different factors influence the emergence of exceptional abilities or talents. Since performance is sensitive to the socioeconomic background of students, gifted learners are less likely to be identified in underprivileged environments (Vaivre-Douret, 2011[158]). A reason for this may also be the acknowledged scarcity of professionals and school leaders trained to effectively identify and deal with gifted children (Resch, 2014[74]). These observations are aligned with more recent findings in Canada (see Box 1.2) that highlight the impact of socio-economic status on who is identified or not and thus, on the social construction of giftedness (Parekh, S. Brown and Robson, 2018[35]).

In response to the aforementioned issues, a diversity of methods and a multidimensional approach is employed to identify gifted students, which includes teacher/parent/peer recommendations, nonverbal tests, observations, characteristics and behavioural checklists. For example, Renzulli et al. (2005[27]) identify the following criteria as essential for a comprehensive identification system: (1) the use of multiple techniques over a long period of time; (2) an understanding of the individual, the cultural-experiential context, and the fields of activity in which the student performs; (3) employment of self-chosen and required performances; (4) a reassessment of the adequacy of the identification system on continuous basis; and (5) the use of the identification data as the primary basis for programming interventions and services.

The phenomenon of the underrepresentation of some groups in gifted education can be further intensified by the specific sets discriminations faced by certain groups of individuals. As such, it will be important for countries to further develop policies aimed to reduce certain groups of students' access to gifted education while promoting inclusive measures. This will ensure that every gifted students, independently from their background will have access to an education system that is both equitable and inclusive.

In Singapore, efforts are underway to diversify the Gifted Education Programme (GEP) for twice-exceptional students (Neihart and Tan, 2016[159]). In the United States, the Javits programme goes a long way in funding programmes that cater not only to gifted students but those recognised as twice exceptional. This includes the *California Lutheran University (CLU) Project for the Advancement of Gifted and Exceptional Students* which aims to ensure, among other goals, that gifted, twice exceptional and underrepresented learners are identified appropriately and that the capabilities of teachers are strengthened so that they may employ effective instructional strategies for these students.[25]

5.3. Promoting gifted students' well-being: socio-emotional needs

A holistic approach to inclusive education entails paying attention not just to the academic achievement of students, but also considering their socio-emotional and psychological well-being, which also includes their sense of belonging and self-worth.

Within existing studies and empirical research, there is ambiguity over the specific social and emotional welfare of gifted children, and how it differs from the larger student population. While on one hand gifted children display characteristics that make them more resilient, on the other hand however, they also possess particular needs that make them more vulnerable to socio-emotional issues (Van der Meulen et al., 2014[160]). Particular reference is made to the asynchronous nature of their development which causes students

[25] See: https://ncrge.uconn.edu/javits-projects/.

to be particularly vulnerable, and which therefore requires a rethinking in the way they are taught, counselled and even parented (Morelock, 1992[161]; Pfeiffer and Stocking, 2000[162]).[26]

Acknowledging the gaps in the data and literature regarding the prevalence of distribution of psychological disorders among gifted learners, Robinson (2003[163]) maintains that the fact that the needs of gifted students may be overlooked in unchallenging educational settings can result in negative and unique consequences. Precisely, exclusive practices might put at risk their social and emotional development, and prevent them from realising their full potential.

According to Greene (2005[113]), unlike their peers, it is more likely that gifted students will face personal conflicts earlier on in their development, particularly in school, because of incongruities in their growing abilities, interests, environments and social expectations. , The experienced conflicts, which are also societal, are based on an analytical attitude that cause gifted learners to "spontaneously and persistently question, evaluate and judge elements of the physical and social environment in a way that does not conform to the norms of society" (Mendaglio, 2013, p. 6[24]).

Increasingly therefore, gifted children *are* at some psychological risk, particularly when characteristics and idiosyncrasies such as intensity, sensitivity impatience, high motor activity and over-imagination are misdiagnosed by professionals with inadequate training of how to deal with such students (Beljan et al., 2006[124]). These characteristics are especially exacerbated when gifted students are placed in contexts and situations within which they are left unmotivated or unchallenged. Consequently, this may lead to distress and anxieties that express themselves through behavioural or psychosomatic disorders, and which may lead to intellectual inhibition, underachievement and mental suffering (Vaivre-Douret, 2011[158]).

In the same way that the socio-emotional needs and challenges may be overlooked, it has also been suggested that those who exhibit emotional and behavioral disorders (EBD) or attention-deficit/hyperactivity disorder (ADHD) are routinely overlooked in the identification of giftedness. Their perceived negative behaviors are regarded as running contrary to expectations of giftedness, when in reality they are expressing their giftedness in a different way (Reid and McGuire, 1995[164]; Karpinski et al., 2018[165]).

Despite differences in the literature regarding the severity of the socio-emotional needs of gifted students, several countries, consider the entire well-being of students. School systems will benefit from a holistic approach focused on both performance and well-being and need to put further effort and resources in identification processes and programmes based on such an approach and on the consideration of both the diversity gifted students represent in schools and the one existing within the gifted students population.

[26] *Asynchrony* is used to describe the mismatch between cognitive, emotional and physical development of gifted individuals. See for instance: https://www.nagc.org/resources-publications/resources-parents/social-emotional-issues/asynchronous-development.

Conclusion

This literature review shows that countries have been designing and implementing various policy initiatives and projects in the domain of gifted education. In spite of tensions in policy making and concerns on whether or not targeting gifted students as a specific group, most education systems across OECD have considered giftedness as an important educational area. Besides equalitarian values, and most recently inclusive ones, gifted individuals are seen as an exceptional source of human capital, which can have a substantial impact on a country's economic growth and society's ability to innovate and face some of its current challenges.

Differentiated pedagogical methods used in combination and adapted to each context seem to provide the most promising practices to respond to gifted students' needs and enhance their educational outcomes. In New Zealand for instance, it is generally accepted that both enrichment and acceleration approaches to gifted education can be used in tandem. A report that traced chances in New Zealand's gifted education provisions over ten years showed increasing preference for a combination of enrichment and acceleration approaches as opposed to either one being used in isolation (Riley and Bicknell, 2013[101]). Additionally, results from the Gifted Education in Europe Survey (GEES) suggest that at least in Europe, where both acceleration and enrichment approaches to gifted education are adopted, there is a preference for enrichment strategies, which are used almost twice as much (Tourón and Freeman, 2017[33]).

However, significant concerns remain in terms of equity and equality within gifted education. The literature identifies remaining challenges in identification bias and access to gifted education programmes. Certain groups, such as girls, students with SEN and ethnic minority students tend to be underrepresented in gifted programmes, which highlights the necessity of rethinking educational policies with an intersectionality lens.

In order to respond to all gifted students' needs and enhance their educational outcomes, various countries have attempted to solve the tensions associated to gifted education by at the same time enhancing the quality of schooling for the whole student population. For example, "[e]uropean educational policies, on the one hand, promote an integrative approach, which is adopted in countries following the principle that differentiated teaching should be provided to all students and, on the other hand, implement a selective approach in which gifted students are treated as a group with special educational needs" (Sękowski and Łubianka, 2015, p. 86[34]).

Crucially indeed, in terms of education systems' ability to promote inclusion for all, an important goal within schools is to enhance all students' outcomes and not just those of individuals identified as gifted. It would be contrary to inclusion principles to favour separate schools or classes for gifted individuals that would jeopardise the quality of the education available for other students, or their well-being at school. Within the literature, there are few references regarding how programmes in gifted education could benefit schools as a whole. There is however an acknowledgement that the framework of differentiation can have a rippling effect and be used to aid *all* students to fulfil their potential (Heller-Sahlgren, 2018[5]).

The Schoolwide Cluster Grouping Model for instance, was identified as an effective inclusion practice that respect and can benefit all students.[27] Likewise, in Singapore, in response to positive feedback and favourable academic results, the Gifted Education Branch was asked to share its curriculum, pedagogical knowledge, and skills with mainstream classroom teachers. As a result, pedagogies and enrichment once reserved for the highest achievers, were adapted and integrated into the mainstream educational experience for advanced learners in mainstream schools (Neihart and Teo, 2013[166]).

Finally, numerous authors highlight the relative absence of consistent international policy studies on gifted education. The related literature is still lacking comprehensive empirical studies to provide guidance for educational policy and practices to serve gifted students (Kim, 2016, p. 102[80]). International cooperation and International academic events[28] will therefore be important for experts and countries to reach some common understanding and share best practices. Advancing gifted education "seems to necessitate the incorporation of definitions of giftedness into educational policies that are both scientifically accurate and socially responsive to varied national contexts. Doing so, will also require consistent alignments between the formation of gifted education policies and the implementation of programmes that respond directly to the pedagogical needs of gifted learners" (Heuser, Wang and Shahid, 2017, p. 13[22]).

In contributing to OECD knowledge on gifted education, this paper, as part of the *Strength through Diversity Project*, hopes to contribute to current and future debates on policy initiatives and practices aimed to promote the inclusion of all gifted students across OECD countries.

[27] See: https://www.aasa.org/content.aspx?id=17446.

[28] See for instance the 17th ECHA Conference happening this year in Porto, Portugal: https://world-gifted.org/event/echa-2020-porto/.

Annex: Cross-National Matrix for Gifted Education in OECD Countries

Country/ Region	(Legal) Definition/ Conceptualisation	Giftedness in SEN	Administrating Agencies	Programming for Gifted Students			
				Identification Mechanism	Tracking and Differentiation (by school, by class, in class)	Acceleration Allowed	Enrichment (in school or out of school/after school)
Australia	All states' policies refer to Gagné's Differentiated Model of Giftedness and Talent as their definition of giftedness	Depends on state, No most often.	Each state's education authority	IQ tests, teacher nominations and performance assessments. Most often, choice of identification and programming strategies are left to schools.	Yes.	Yes.	Yes. Ability grouping is a commonly used method.
Austria	Multidimensional and dynamic conception of giftedness and talent that includes high performance in intellectual, emotional, social and artistic fields, sports.	No	Federal Ministry of Education, Art and Culture; Federal Ministry of Science and Research; Austrian Research and Support Centre for the Gifted and Talented (1999)	Most common is the nomination by a teacher or self-nomination with evidence of above-average school performance or high scores in psychometric tests.	Yes. Individualized instruction is generally emphasised. Recent decades have seen greater efforts to differentiate gifted from regular performing students.	Yes. Grade skipping; secondary school students are allowed to take university courses.	Yes. Schools are encouraged to provide special courses for gifted students, summer camps for gifted students, or Olympiads for math and science students.
Belgium							
Canada	No clear national definition. School districts determine who in identified as gifted and eligible for special programming.	In some provinces	Provincial ministry of education				
Chile							
Czech Republic							
Denmark							
Estonia							
Finland	No official definition. Considers that all students have special needs and refuses labels.	No			Yes. All teachers receive a training in differentiated education that can be adapted to all students.		
France	Dominance of IQ tests and Renzulli model.	Yes	Ministry of Education and Youth. Work closely with a National Working Group on giftedness.	Parent nomination and assessment by a recognised psychologist (psychometric tests).	Yes. Possibility of attending higher classes and higher level of schooling.	Yes.	Yes. In and out of school: cluster grouping with enriched curricula, meeting with experts, activities in universities.
Germany		No					

Country/ Region	(Legal) Definition/ Conceptualisation	Giftedness in SEN	Administrating Agencies	Programming for Gifted Students			
				Identification Mechanism	Tracking and Differentiation (by school, by class, in class)	Acceleration Allowed	Enrichment (in school or out of school/after school)
Greece	Gifted students are those who gifted students who possess mental abilities and talents developed to the extent that far exceed the expectations of their age group in the 3699 Act of 2008. Renzulli model is most used.	Yes					
Hungary		No					
Iceland							
Ireland							
Italy							
Japan	Strong conception of egalitarianism leads to no official definition. Recent focus on STEM because of the country's national interests.						
Korea							
Latvia							
Lithuania							
Luxembourg		Yes					
Mexico	Those who stand out in science-technology, social-humanistic, artistic and/or physical activities such as sports. Students who have above-average abilities in one or more of the following areas: intellectual, creative, socioemotional, artistic, and psychomotor. The country recognises talent development, and mainly base its conceptualisation on Renzulli model. Giftedness can be only developed through the interaction of individual and social factors. Recognises cultural variations.	Yes	Intervention Model for the Educational Attention for Gifted Students, mainly led by the General Direction of Special Education at the Federal level. Each state authorities should design its strategy, but no clear action lines have been defined. In this vacuum, the main actors are associations and NGOs (mainly the Mexican Association for the Support of Gifted People).	The most common methods are IQ tests, Family nominations, teacher nominations and psychometric tests.	Yes. In class.	Yes.	Yes. It is considered as the best strategic intervention.
Netherlands							
New Zealand							
Norway		No					

Country/ Region	(Legal) Definition/ Conceptualisation	Giftedness in SEN	Administrating Agencies	Programming for Gifted Students			
				Identification Mechanism	Tracking and Differentiation (by school, by class, in class)	Acceleration Allowed	Enrichment (in school or out of school/after school)
Poland	General intelligence and ability in a specific domain. Emphasis on creative ability that is a characteristic that allows for finding problems and solving them in a new unique and original way. Article 1 of the Polish School Education Act of 1991 says that the education system shall ensure "support for highly gifted students by enabling them to follow individual study programs and graduate from any kind of school in a shortened time."	Yes		Right to individualised education program in one or several compulsory subjects.	Yes. Specialised school system for gifted students in arts or sports.	Yes.	Yes.
Portugal	Model of multidimensional intelligence are preferred. No legal definition, clear references or guidelines on giftedness, though inclusive education is a legal and political priority of the Portuguese government.	Not mentioned specifically but can be understood as SEN.	Polish Ministry of National Education (MEN); Ministry of Science and higher Education	The country is moving toward a rather complete identification. It includes assessment by a professional team using interviews and written exercises, parental nominations, teacher nominations, self-nominations and peer nominations.	Yes.	Yes. However, less and less considered as a favourable option.	Yes.
Slovak Republic		Yes					
Slovenia							

Country/ Region	(Legal) Definition/ Conceptualisation	Giftedness in SEN	Administrating Agencies	Programming for Gifted Students			
				Identification Mechanism	Tracking and Differentiation (by school, by class, in class)	Acceleration Allowed	Enrichment (in school or out of school/after school)
Spain	Top 2% of the population. Multidimensional models prevail in academic sector while IQ tests prevail in the professional sector. Gifted students considered by the Organic Law of Education 2/2006 (LOE), their needs should be met after identification following the principles of normalisation and inclusion.	Yes	Ministry of Education and Science	The educational authorities of the autonomous communities are responsible for implementing identification programmes and intervention plans. Some use IQ test while others use Castelló's more complex model.		Yes. Most widespread practice.	Yes. In and out-of-School.
Sweden							
Switzerland							
Turkey							
United Kingdom	Difference between gifted students, those who excel in terms of academic performance and talented students, those who excel in more practical skills such as arts or sports. 5 to 10% of the students.	Yes	Ministry of Education	Mainly teacher nominations		Yes, but rarely used. Curriculum acceleration in some domains but rarely grade skipping.	Yes. Method preferred.
United States	Definition depends on States. Performances in IQ tests remain the most common reference to define giftedness in practice, though various other models are also being used. In their definitions, 34 states recognize students with high IQ, 24 recognize general academic achievement, 21 list talent in the performing or visual arts, 21 list the creatively gifted, and 20 include students gifted in a specific academic area such as mathematics or science.	Yes	Each state's education authority	Parent and teacher nominations followed by IQ tests.	Yes.	Yes. Not a common practice.	Yes. Most common strategy.

Sources: (Sękowski and Łubianka, 2015[34]) (Tourón and Freeman, 2017[33]) (Heuser, Wang and Shahid, 2017[22]) (UNESCO, 2004[31]) (Sastre-Riba, Pérez-Sánchez and Villaverde, 2018[12]) (Harris and Lizardi, 2012[66]) (ANEIS, 2017[95]) (Limont, 2012[82]) (Walsh and Jolly, 2018[84]) (DGESCO, 2019[25]) (Koshy, Smith and Casey, 2018[103]) (Worrell et al., 2019[4])

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