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Policy Approaches and Initiatives for the Inclusion of Gifted Students in OECD Countries

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This working paper has been authorised by Andreas Schleicher, Director of the Directorate for Education and Skills, OECD.
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Abstract

To date, no international consensus exists on the definition of giftedness. There is a great diversity in conceptualising giftedness not only between, but also within countries. Inevitably, this has a major influence on how countries design and implement gifted education programmes. This paper starts with an overview of the extended academic literature on the definition and identification of giftedness. It then describes OECD countries' policy initiatives to respond to the needs of gifted students and to foster their inclusion in education systems. Following the *Strength through Diversity* project's framework, the analysis focuses on the areas of governance, resourcing, capacity building, school-level interventions, and monitoring and evaluation of gifted programmes. The paper finds that a greater emphasis is placed on the governance of gifted education, often related to broader equity and inclusion concerns. Nonetheless, further research and evaluations are needed to understand what policies and practices can best benefit gifted learners while ensuring positive educational and well-being outcomes for all students.

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Introduction

At the age of 5, 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 mathematics exam papers for fun and is working towards his mathematics A-Level examinations other students in the United Kingdom usually sit between the age of 17 and 18.

In conversations about educational policy and issues of equity and inclusion, 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 is a complex issue within educational policy. The definitions and approaches adopted by OECD countries to respond to the needs of gifted learners vary greatly. This paper seeks to review policies and practices on gifted education across OECD countries, keeping in mind the framework of the *OECD Strength through Diversity Project*, which focused on inclusive education (Cerna, 2021[3]).

The first chapter of this paper reviews 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 challenges, as well as areas of convergence. The subsequent four chapters of the review look at giftedness through the analytical framework that guides the *OECD Strength through Diversity Project*. It analyses policy initiatives and practices in the domains of governance and resources; capacity building; school-level interventions; and evaluation and monitoring that address the needs and the inclusion of gifted students in education systems.

[1] See: https://www.1843magazine.com/features/the-curse-of-genius (accessed on 3 May 2021).

1. Giftedness: conceptualisation, identification and policy challenges

To date, no international consensus exists on the definition of giftedness. There is a great diversity in conceptualising giftedness 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 any, has therefore important consequences for the policies and interventions that follow.

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

1.1. How to measure giftedness? 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. Researchers 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 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]).

The literature highlights that giftedness is commonly understood as the fact of an individual having a considerably high Intelligence Quotient (IQ) according to recognised IQ test assessments. A child or adolescent is identified as gifted when they have more advanced intellectual capacities than the other children of their age and perform above a certain limit fixed by a psychologist in an IQ test. Therefore, the definition of giftedness is intrinsically linked to the 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. Nonetheless, the notion of giftedness, while commonly associated with a high IQ, has also been expanded to include talent in other domains. As such, high abilities in, for example, sports and arts, can also be associated to giftedness.

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 Gardner (1992) who proposed the theory of "multiple intelligences". It corresponds to a more complex frame to measure intelligence which 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 programmes 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 Māori perspective of giftedness (see Box 1.1).

Box 1.1. A cultural perspective on giftedness: the Māori example

Why should gifted programmes be culturally-sensitive?

Prominent theoreticians of giftedness, such as Sternberg (2005[12]), have emphasised the importance of the socio-cultural context in the conceptualisation of giftedness. People from different socio-cultural contexts may value different forms of intelligence. For example, while in some societies a mainstream view of higher-than-average intelligence may relate to outstanding comprehension in mathematics and reading, others may see advanced interpersonal skills or exceptional crafting skills as a sign of giftedness.

Gifted programmes that are not sensitive to cultural variations might overlook children's skills that are not recognised academically but are highly valued among certain communities (Sternberg, 2004[13]). Attention (or lack thereof) to this aspect of gifted education has implications in terms of (1) what type of students are identified as gifted and participate in gifted programmes and (2) the inclusion of diverse gifted students who may not feel they are valued and belong to the education system. Therefore, it is important to understand intelligence in its cultural context and design culturally-sensitive gifted programmes to respond to the needs of all gifted students.

Considering the Māori perspective in gifted programmes in New Zealand

Bevan-Brown (2009[14]) explains that the concept of giftedness should be interpreted through a series of cultural lenses. One of them is to consider the areas that constitute giftedness in Māori culture. Giftedness, as understood by Māori communities, is a broad concept, including spiritual, cognitive, affective, aesthetic, artistic, musical, psychomotor, social, intuitive, creative, leadership and cultural abilities and qualities (p. 7[14]). Furthermore, an important element of the Māori concept of giftedness is the requirement to use one's gifts and talents in the service of others.

In New Zealand, since the end of the 1990s, the Ministry of Education has developed a strong focus on the inclusion of Māori students. Its framework and strategies, including the *Ka Hikitia* - Māori Education Strategy that aims to achieve system shifts in education and support Māori learners, clearly emphasise the necessity of acknowledging Māori students' values and the diversity of their needs and experiences (Ministry of Education, 2012[15]).[2]

New Zealand Gifted Education Package considers the diversity of conceptualisation of giftedness across communities and that "gifts or talents can be different within the context of ethnicity or culture."[3] This approach to the design and implementation of gifted programmes acknowledges that Māori ideas of giftedness include personal qualities as well as abilities, and are grounded in Māori *kaupapa* (Māori approach). In practice, this can be translated into the incorporation of Māori knowledge and practices in identification and assessment methods, and the participation of Māori educators in the design of an adapted curriculum.

However, "[t]his lack of conceptual consensus undermines identification and compromises the effectiveness of the educational intervention" (Sastre-Riba, Pérez-Sánchez and Villaverde, 2018[16]). Practitioners and policy makers are today confronted with a vast array of theoretical approaches.

[2] See: https://www.education.govt.nz/our-work/overall-strategies-and-policies (accessed on 5 May 2021).

[3] See: https://parents.education.govt.nz/primary-school/learning-and-development-at-home/support-for-gifted-and-talented-students/ (accessed on 5 May 2021).

1.2. A plethora of theoretical frameworks 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. In the 1920s, Terman's published the first work focused on gifted students and their specific characteristics (Terman, 1926[17]). Since then, researchers have conducted patient studies in order to define, measure and qualify intelligence. From the 1960s onwards, using IQ tests alone has been seen as a rather limited method – educators and psychologists then started to look into other expressions of people's cognitive capacities. One of the main accepted models of intelligence nowadays in cognitive psychology is the Cattell-Horn-Carroll (CHC) intelligence theory, in which human intelligence is modelled as a hierarchical structure with the g factor at the top stratum, hypothesised to be at the core of all broad abilities (processing speed, working memory, verbal comprehension, etc.) in the stratum beneath (Schneider and McGrew, 2012[18]). General intellectual ability as measured by IQ tests can also be broken down into two more comprehensive components: verbal intelligence, and non-verbal intelligence, or crystallised (gc) and fluid intelligence (gf) (Cattell, 1963[19]; Horn and Cattell, 1966[20]).

A large part of the academic debate has shifted towards conceptions that encompass many dimensions, such as creativity and empathy. Considering the plethora of theories related to intelligence and giftedness, this subsection 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 Françoys Gagné, Joseph Renzulli, Robert Stenberg and Howard Gardner. However, their theories build on other authors' works and defining intelligence in itself bears a strong 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, a 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[21]). A decade later, in 1916, Alfred Binet and Théodore 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 remains 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 who in 1938 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, starting 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 in the 1980s. 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[22]) – 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.[4] 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 Synthesised, and constitutes an attempt to establish a potential common basis to identify gifted people (Sternberg, 2003[23]). In this model, giftedness is conceptualised as a synthesis of these three elements. According to Sternberg "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[23]).
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[24]; Merrotsy, 2017[25]; Gagné, 2004[26]).

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 understandings of what intelligence is (Terriot, 2018[7]). Such theories, and those that followed, 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[27]). 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[28]; Bevan-Brown, 2011[29]; Worrell et al., 2019[4]; Heuser, Wang and Shahid, 2017[30]).

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.

[4] Despite receiving wide support, Gardner's theory of Multiple Intelligence is still debated within the scientific literature. Gardner's theory has been mainly criticised for providing inadequate empirical support and not being consistent with cognitive neuroscience findings (Waterhouse, 2006[214]). Visser, Ashton and Vernon (2006[215]) who investigated Garnder's theory in a sample of 200 adults found that abilities involving other influences than cognitive ones were significantly less strongly *g*-loaded (where *g* means *g factor*). These authors suggest, among other elements, that the notion of "skill" or "talent" might be more appropriated than "intelligence" for some of the dimensions described by Gardner.

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 (2004[26]), who makes a distinction between the two in his Differentiated Model, a model used in various countries such as in Australia (Merrotsy, 2017[25]). 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[24]).

That the two terms are used interchangeably points 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[31]). 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[31]; Mendaglio, 2013[32]).

"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.[5]

The emphasis of potential is thus an important way of also combatting claims of elitism within the field, as it acknowledges 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 may benefit from differentiated instruction.

This changing approach can be observed in several countries' change in terminology. 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[33]). This (Potentiel, 2019[34]) shift is, however, still relatively latent in the identification process of gifted individuals which remains one of the 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.[6] 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[35]). 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[36]).

[5] See: https://www.moe.gov.sg/education/programmes/gifted-education-programme/gep-identification (accessed on 8 May 2021).

[6] In most contexts IQ tests are or have been the main identification strategy. However, in less common cases such as that of the Russian Federation, these tests have barely or not at all been used to identify gifted students (Grigorenko, 2017[102]).

In the absence of a commonly agreed definition of giftedness, it is up to countries, and sometimes jurisdictions within countries 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, comparisons quite impossible, this phenomenon hinders the possibility of a reliable estimation of the number of gifted students (Box 1.2). It can lead to a student being identified as gifted in a jurisdiction 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 education programmes. The United States and Canada provide examples of differences of definitions and identifications across jurisdictions.

In the United States, only the states of South Dakota, Massachusetts and New Hampshire do not have any official definition of giftedness. Each state has its own definition 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 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.[7]

Box 1.2. 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 Gagné's definition of giftedness, identifies the top 10% of its students as belonging to this category (Center for Education Statistics and Evaluation, 2019[37]). This stands in contrast with countries 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[38]). While the target number of gifted students in South Korea is 3%, figures continue to exceed this target (Cho and Suh, 2016[39]). According to the gifted education database (GED) website,[8] gifted and talented education currently targets 82 012 people, which corresponds to approximately 4% of the students' population. 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 correspond to 3 per 100 000 children within a population that is normally distributed (Ibata-Arens, 2012[38]).

In the United States, the percentage of students receiving gifted education services vary substantially across the country. While in eight states 11% or more students were identified to receive such services, this rate is between 3-10% in 13 states and between 0-2% in 30 states (Plucker et al., 2018[40]).

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 larger than 130 on the IQ test.[9] Other identification methods are used in Mexican schools (UNESCO, 2004[41]).

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, 2006[42]). In Germany, where there is a significant academic and political resistance to the very notion of giftedness because of its elitist connotation, the state of Hamburg is considered to have the highest percentage of gifted students with 0.07% (Tourón and Freeman, 2017[43]). In Spain, during the 2015-2016 academic

[7] 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 (accessed on 9 May 2021).

[8] See: https://ged.kedi.re.kr/index.do. (accessed on 9 May 2021).

[9] See http://www.cedat.com.mx/es/estadisticas-de-sobredotacion-en-mexico (accessed on 3 June 2021).

year, the Ministry Education estimated that 0.27% of the total student population was identified as gifted, which corresponds to a significant increase from the previous year but remains far from the 2% aimed (Sastre-Riba, Pérez-Sánchez and Villaverde, 2018, p. 65[16]). There exist disparities in the rate of students identified as gifted between the different autonomous communities, ranging from 0.012 in the community of Valencia to 1.206% in the Region of Murcia (*Ibid.*).

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[43]) which, to a certain extent, could allow for international comparison.

In terms of identification processes in the field, the literature points out the existence of several and non-exclusive identification methods in educational policies and practices (Sękowski and Łubianka, 2015[44]):

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[45]).
2. *Ability tests*, most of which focus on the academic performance, although some look at the way students learn and/or their involvement in a specific domain (Cao, Jung and Lee, 2017[46]).
3. *Teacher nominations*, which are 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.
4. *Parental nominations*, which constitutes a subjective tool in the identification process and is usually not used alone.
5. *Peer opinion*, also not used alone, can give a quick and adequate idea of what students are the best in a certain a domain.
6. *Self-identification*, consisting in letting students participate in out-of-school educational, scientific, artistic, creative etc. activities and programmes in order to identify their motivation and potential.

Usually, methods 3 to 5, and in some cases method 2, are used for an initial screening in order to identify who may be eligible for a gifted education programme. Method 1, and often method 2, are used in order to confirm an initial assessment and confirm a child or adolescent's participation in such a programme. Most countries use several of these methods at the same time, such as France which primarily relies on both teacher and parents' nominations (Sękowski and Łubianka, 2015[44]), following which a school board decides whether or not the student should benefit from special provision. It should nonetheless be noted that "[w]hile there is consensus that identification of gifted and talented pupils must be by multiple sources, there is still lack of clarity and understanding about the relative advantages and disadvantages of different identification procedures (White, Fletcher-Campbell and Ridley, 2003, p. vi[47]).

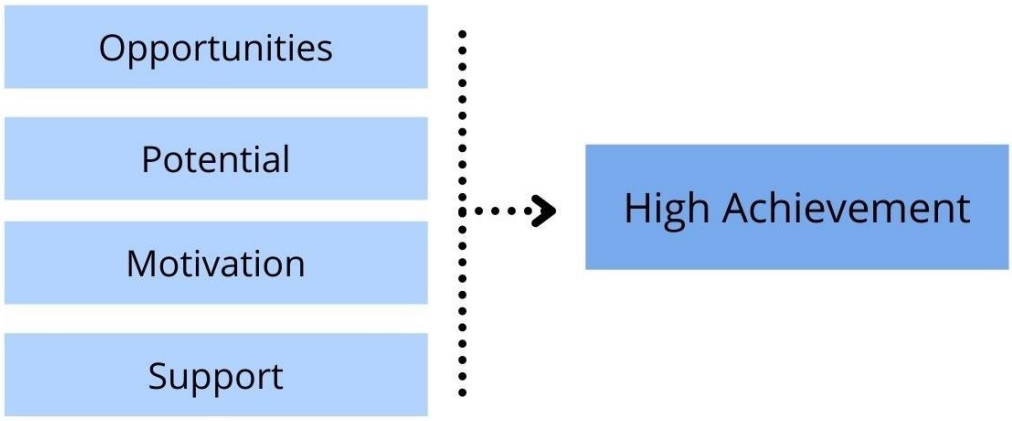
Authors observe that in spite of a shift towards more comprehensive definitions, identification methods ultimately still often rely on performance assessment and IQ test scores in various countries, such as the United States (McClain and Pfeiffer, 2012[48]; Worrell et al., 2019[4]). However, these tests are increasingly challenged and the multiplication of methods of identification is observable in various countries. A low score on an IQ test does not necessarily mean that an individual is not gifted. As a result, relying on an identification strategy based on such tests only might be perceived as a potentially exclusionary practice.

The fact that education systems are progressively considering broader identification strategies 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[49]) and has opened the door, though still marginally, to relatively new identification processes.

Figure 1.1. Recent shift towards a holistic approach to giftedness

The Eyre Equation



Source: Adapted from Eyre, D. (2011[50]), *Room at the top: inclusive education for high performanc*e, p.20.

1.5. Considering the effect of definition on the identification of giftedness among 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 outdated identification methods for the under-representation 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[51]; Pfeiffer, 2012[52]; Worrell et al., 2019[4]; Centre for Education Statistics and Evaluation, 2019[53]). The phenomenon of the underrepresentation of some groups in gifted education can be further intensified by the specific sets of discriminations faced by certain groups of individuals.

According to Callahan's research (2005[54]) on the identification of gifted students from underrepresented populations (i.e. minorities, children from low-economic status environments, immigrant students with limited knowledge of the hosting country's language), a series of interrelated factors such as inherent bias and oversimplified assessments placed the researched groups at a severe disadvantage. Additionally, Ford (2010[55]), 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 students, it was detrimental to those from ethnic minorities who would perform less well on paper tests or who might

have different cognitive styles (Mayes and Moore III, 2016[56]). 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 in the state found that unintended barriers may deter some gifted students, and notably Aboriginal students, students with special education needs, and rural and remote students, from sitting selective tests (NSW Department of Education, 2018[57]). 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 a move to ensure that entry into selective schools is based on ability and not background.

The role that socio-economic status and class play is also an issue addressed in the literature. A study by Turkheimer and his colleagues (2003[58]) revealed that aside from the general and known shortcomings of IQ tests as a measure of intelligence, they pose an even greater challenge for children from impoverished families. Likewise, different factors influence the emergence of exceptional abilities or talents. Since performance is sensitive to the socio-economic background of students, gifted learners are less likely to be identified in underprivileged environments (Vaivre-Douret, 2011[59]). 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[60]). These observations are aligned with more recent findings in Canada 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[45]).

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, non-verbal tests, observations, characteristics and behavioural checklists. For example, Renzulli et al. (2005[36]) 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 a continuous basis; and (5) the use of the identification data as the primary basis for programming interventions and services.

1.6. 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 Kimberlé Williams Crenshaw (1991[61]), refers to the notion that the disadvantage an individual faces is shaped by several dimensions of his/her 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 1.3). 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[45]).

1.6.1. Twice-exceptional students: giftedness and special education needs

Most commonly addressed is the relationship between gifted education and special education needs (SEN), such as physical impairment, learning disabilities and autistic spectrum disorders and Attention-Deficit Hyperactivity Disorder (Brussino, 2020[62]; Mezzanotte, 2020[63]). 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[64]). 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[65]; UNESCO, 2020, p. 73[66]). For example, giftedness may not be recognised in children with autistic spectrum disorders and some gifted learners can also have reading difficulties. 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[64]; Williams King, 2005[67]). 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. Twice-exceptional learners are less likely than others to receive appropriate and challenging learning opportunities.

In some countries such as Singapore, efforts are underway to diversify the Gifted Education Programme (GEP) for twice-exceptional students (Neihart and Tan, 2016[68]). 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.[10]

As research within this area expands, there is increasing interest in the 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[56]; Williams King, 2005[67]; Beckmann and Minnaert, 2018[69]).

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[65]). In their in-depth review of the socio-emotional/psychological characteristics of twice-exceptional students, Beckmann and Minnaert (2018[69]) discovered that only about 5% of articles on the subject used empirical studies.

1.6.2. Giftedness and ethnic groups

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[56]) maintain that students who fall under this category face new and specific challenges. 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 over-represented in special education and are disproportionately represented in the disability categories, including cognitive disabilities and emotional disturbance (Mayes and Moore III, 2016[56]; Robinson, 2017[70]), as 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 over-represented by 40% to 50% in special education programmes (Harris et al., 2009[71]). Likewise, Robinson uses his "Triple Identity Theory" to explore the intersection between race, dyslexia and

[10] See: https://ncrge.uconn.edu/javits-projects/ (accessed on 3 June 2021).

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[70]). Crucially, however, what Mayes and Moore III and Robinson overlook in their framework of intersectionality is the role of gender.

1.6.3. Giftedness and 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[72]) 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[73]), Peterson was able to determine that the method of identification used greatly affected gender differences. In elementary school that 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[74]) showed that gifted girls are particularly vulnerable to "underachieve, overextend, and succumb to personal and societal pressures" and risk becoming adult underachievers.

Box 1.3. Measuring intersectionality in relation to giftedness in Toronto

In 2018, Parekh, Brown and Robson (2018[45]) 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 the 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 student.

Through the operationalisation of intersectionality in regression analysis using interaction effects, they were able 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 among race, gender, and parental occupational class. They find that there is no association between being identified as gifted and high academic achievement.

Regarding gender, there seems to be a gender bias favouring males – 60% of gifted students are male while gender distribution is equally divided in the total school population. 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[45]).

Therefore, a female student from a disadvantaged background and an ethnic group (or "race") other than White or East Asian will have a significantly smaller probability of being 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 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[45]).

1.7. Why does gifted education matter? Inclusive education and outcomes for gifted individuals

1.7.1. Academic 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 address 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[75]; Renzulli, 2016[28]; Freeman, 2002[76]).

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[77]). On a larger scale, this can lead to educational policies that, in the pursuit of equity, exclude gifted students from reforms meant to prioritise under-performing and disadvantaged students (Gentry, 2014[78]; Sahlgren, 2018[79]).

Some authors argue 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[80]). "Numerous longitudinal studies on high-performing adults (e.g. Nobel Prize winners) showed that they were rarely outstanding as children" – which also casts doubt on the value of early identification (Eyre, 2011, p. 18[50]) and highlights the overestimated importance of high achievement in the conception of giftedness.

In fact, the literature often highlights that low academic achievement is not an infrequent concern among gifted students (Peterson, 2006[81]), mainly in primary education (Çakır, 2014[82]). Little attention to giftedness and as a result, inappropriate education response could generate significant talent loss (Baylor, 2019[83]). Measuring gifted students' underachievement, i.e. the difference between their potential and performance, is challenging. Evidence shows that the percentage of significantly underachieving gifted students might range from at least 10% to approximately 40%, with some studies suggesting that it could be even higher (Centre for Education Statistics and Evaluation, 2019[53]). This suggests that a significant number of gifted students do not reach their full potential and can end up failing school, with some groups being more vulnerable than others to underachievement (see section 1.6).

Nonetheless, recent research suggests that these considerations need to be nuanced. The assumption that gifted students experience difficulties in education and are at particular risk of school failure has been challenged. Guez et al. (2018[84]), for example, criticising the lack of studies based on representative samples, analysed a large database of French lower secondary school students (N=30.489). They found that high-IQ students achieve higher academic results; show a higher level of motivation, academic self-efficacy and perceived self-regulation; and that their performance is less related to parental education than other students. While this study, also building on previous

evidence, suggests positive academic and, to some extent, well-being outcomes for gifted lower secondary students, primary gifted students might face greater challenges and require more attention (Moon, 2009[77]; Çakır, 2014[82]).

In spite of existing debates, there seems to be consensus on the fact that not all gifted students are high achievers (and reversely), and that without appropriate support in school, they might not reach their full potential. To address gifted students' uniqueness is therefore essential in supporting them to reach 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. While some studies from the 1990s estimated that among all dropouts, around 20% could be gifted students (Matthews, 2006[85]), more recent evidence suggest much lower numbers. Authors such as Matthews (*Ibid.*) and Guez et al. (2018[84]).explain that studies estimating dropouts are inconsistent; dropout rates among the gifted may be on average lower than among the non-gifted student population. Nonetheless, dropout rates might vary among the gifted student population. For example, while Matthews finds that less than 1% of students participating in a private summer enrichment program dropped out, this number increased to 5% when a larger, more economically diverse group of gifted students was taken into account (Renzulli and Park, 2000[86]; 2002[87]).

Although the topic has been widely covered for the overall student population, it is considered still inadequately addressed for the gifted student population (Renzulli and Park, 2002[87]; Ritchotte and Graefe, 2017[88]) and research remains rather scarce. In other words, studies on how high-potential students uniquely experience dropping out of school is in its beginning stage. Regarding dropouts, more research would also be needed to analyse how giftedness interacts with other factors at play and whether giftedness is the main cause for dropping out. A number of gifted students leave school due to multiple factors including school failure, low involvement in extra-curricular activities and low involvement of the parents in their education (*Ibid.*). Recent research shows that gifted students 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 that might be due to lack of stimulus (Koenderink and Hovinga, 2018[89]).

1.7.2. Well-being outcomes

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

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 the one hand research shows that gifted children display characteristics that make them more resilient and that higher ability might lead to positive outcomes later in life (Bronw, Wai and Chabris, 2021[90]). On the other hand, various experts consider that they may also possess particular needs that make them more vulnerable to socio-emotional issues at an early age (Van der Meulen et al., 2014[91]; Rinn, 2018[92]). Particular reference is made to the asynchronous nature of their development which causes students to be particularly vulnerable, and which therefore requires a rethinking in the way they are taught, counselled and even parented (Morelock, 1992[93]; Pfeiffer and Stocking, 2000[94]; Rinn and Majority, 2018[95]).[11]

Acknowledging the gaps in the data and literature regarding the prevalence of distribution of psychological disorders among gifted learners, Robinson (2003[96]) 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.

[11] 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 (accessed on 10 June 2021).

According to Greene (2005[97]), 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 causes 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[32]).

In 2016, a team of academics in the Netherlands led an evaluation entirely focused on gifted students' psychological well-being at the primary level. In general, the differences in well-being between the gifted and the comparison group were relatively small, although the gifted children experienced lower self-worth and social acceptance. In contrast, highly creative gifted children experienced lower feelings of well-being than less creative gifted children, while the reverse was true for children who were nominated by their teacher. Additionally, high-performing gifted children showed higher psychological well-being than did underachievers (Kroesbergen et al., 2016[98]).

Therefore, in certain circumstances, gifted children might be 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[99]). 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[59]).

In the same way that the socio-emotional needs and challenges may be omitted, it has also been suggested that those who exhibit emotional and behavioural disorders (EBD) or attention-deficit/hyperactivity disorder (ADHD) are routinely overlooked in the identification of giftedness. Their perceived negative behaviours 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[100]; Karpinski et al., 2018[101]).

Despite differences in the literature regarding the severity of the socio-emotional needs of gifted students, several countries consider the overall 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 student population.

1.7.3. Social and economic outcomes

Another major motivation in supporting gifted individuals through education policy relates to the broader social and economic outcomes resulting from their giftedness. Grigorenko (2017[102]), mentioning Kholodnaya's prominent theory on giftedness, explains that there are two key interpretations of the concept. The first is humanistic and egalitarian and relates to values of education for all mentioned in the previous part. It assumes that all children have a right to adequate education, which implies that the education of gifted children should be adapted to their needs, and somehow different from that of other children. The second interpretation is considered to be a pragmatic one. It "assumes that an investment in the development of a gifted child is expected to generate dividends, as this child will become an adult who may contribute substantially to the economy of the society that invested in the child" (p. 6[102]).

Research suggests that high-performing students contribute disproportionately to countries' innovation and economic growth. It is therefore assumed that the societal reward for supporting gifted children to reach their full potential could be particularly significant (Sahlgren, 2018[79]; Boer, Minnaert and Kamphof, 2013[103]). 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[75]). 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[30]).

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 tends 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.

2. The governance of giftedness in education systems

Policies giving special educational attention to the most talented emerged through the 20th century at different moments depending on the country. In some European countries, 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 1930s (Sastre-Riba, Pérez-Sánchez and Villaverde, 2018[16]). After the Cold War, the European Council for High Ability was created in 1987 unifying teachers and academics from the East and the West of the continent. Less than 10 years later, in 1994, the Council of Europe issued a recommendation related to the education of gifted children (Tourón and Freeman, 2017[43]), which was careful in avoiding the 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[104]).

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 supporting 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[41]; Ainscow, 2019[105]), though the main focus was on children with special education needs such as physical impairments (Harris and Lizardi, 2012[106]). In Australia, the first educational policies for gifted children were developed in the 1970s following the 1973 Commonwealth Schools Commission Act (Luburic and Jolly, 2019[107]).

In some countries, an increase in focus on gifted education in educational policy can be partly linked to the national priorities of a specific period. In the United States, for instance, the first policies were developed in the 1950s 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 an advantage in the space race with the Union of Soviet Socialist Republics, where similar dynamics could be observed in terms of gifted education (McClain and Pfeiffer, 2012[48]). A more recent example is Japan, where STEM gifted education has recently 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[30]; Basister and Kawai, 2018[108]). 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 (Heuser, Wang and Shahid, 2017[30]).

Most OECD countries seem to have integrated the area 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. 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. Consequently they are reluctant to develop policies to promote gifted educations and are concerned it would be to the detriment of other students (White, Fletcher-Campbell and Ridley, 2003[47]; Eyre, 2011[50]; Kronborg and Cornejo-Araya, 2018[109]; O'Reilly, 2018[110]; Worrell et al., 2019[4]). 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[30]). Inevitably, these politico-philosophical debates lead to important questions in terms of policymaking. Among them, are (1) to what extent 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[44]) 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, these 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 where all students can receive the same education. In contexts 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[30]). 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, an approach upheld by important academics in the field such as Borland (2005[111]) and Eyre (2007[112]). The most prominent examples are Scandinavian countries where the notion of giftedness can exist for administrative purposes but is not used as a label in programming and school contexts (Sękowski and Łubianka, 2015[44]; Tourón and Freeman, 2017[43]; Heuser, Wang and Shahid, 2017[30]);
3. *Policies that integrate gifted education into mainstream policies (part of sub-group)*. 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, a category traditionally reserved for students with learning difficulties and/or behavioural problems (Tirri, 1997[113]; O'Reilly, 2018[110]; Alves, 2019[114]). In Spain, for example, as early as 2002, *the Organic Law of Quality Education* (*Ley Orgánica de Educación*) (PL 10/2002) incorporated gifted students into the category "specific educational needs" (SEN). 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[115]). Giftedness being part of SEN is also encountered in various other countries, including France, Ireland, Mexico and the United Kingdom. As a result, this leads to educational policies such as "dealing with differences" and "personalised learning" that promote differentiated instruction; and
4. *Policies that approach gifted education policy as a separate and specific policy measure*. Such an approach can be considered as a sub-group of the first approach ("Policies that explicitly name and identify gifted students"). However, initiatives in this fourth category imply a more developed set of measures focused on giftedness. As an example, Korea set up new educational institutions for gifted education. These included gifted secondary 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[116]) (Korean Educational Development Institute, 2013[117]). It should be noted that these are predominantly schools for students gifted in *science* or *maths* - though recently, the country is expanding its notion of giftedness to include 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. These different approaches, as well as the ongoing debates on giftedness and talent (see section 2.3.), determine whether and how gifted students are referred to in legal and policy frameworks (see Table 2.1 below).

Table 2.1. Official or most common terminology to name gifted children

Terminology	Examples of countries
Gifted (and potentially other terms)	Germany, Spain, Portugal
Gifted and talented	Australia, Austria, Italy, Korea, Netherlands, Slovenia, United Kingdom, United States
Talent (and potentially other term)	Colombia
Other terms	France, Mexico
No term	Finland, Norway, Sweden

Note: Data as available in May 2021. Some information in this table may not be up to date.

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. Regulatory frameworks and administrative entities

Regulatory frameworks with direct references to gifted individuals are rather scarce across OECD countries. While in some contexts, like in Korea, clear official categories are available, some other countries such as Portugal do not have any legal reference to gifted students but have recently developed a comprehensive legal and policy framework putting inclusive education, curriculum flexibility and differentiated pedagogy as a priority (Alves, 2019[114]). 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.

In most contexts, mainly 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. Ireland, for example does not have an official definition of giftedness, and as such, no framework to promote gifted education. Guidelines were developed in 2001 by The National Council for Curriculum and Assessment (NCCA), the statutory body of the Department of Education and Skills, and so far, only

one national formal programme was implemented. In this context, civil society organisations in the countries, mainly universities and parent associations, have been very active in the development and implementation of gifted education initiatives (O'Reilly, 2018[110]). In Mexico, in spite of a recent focus on gifted students,[12] private institutions, advocacy groups and associations are the main actors in the identification of and programming for gifted students (Harris and Lizardi, 2012[106]; Heuser, Wang and Shahid, 2017[30]). In Germany, while various states have developed frameworks and have schools that provide gifted education provisions, non-governmental actors play a major role in promoting and supporting gifted education (Fisher and Müller, 2014[118]).

In terms of governance of gifted education, while on the one hand, it 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.

At the system level, responsibility for gifted education is typically spread out across ministries and national institutions. These automatically include ministries of education, though other bodies can be involved, such as inter-ministerial agencies and research centres. 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, (*Österreichisches Zentrum für Begabtenförderung und Begabungsforschung, ÖZBF*) (Heuser, Wang and Shahid, 2017[30]). The latter does not work in isolation. It operates in the middle of two levels: federal and provincial through Federal Coordination Points, where the president of the Provincial School Governments appoints a co-ordinator for talent support (Nagy and Zsilavecz, 2011[119]) Moreover, it is financed by the federal state and has the mandate to initiate gifted education, thus making it unique in Europe (Resch, 2014[60]). Besides contributing to the academic research on giftedness, it helps develop strategies at the national and sub-national levels.

In some countries, though a national definition might exist, sub-national 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 each provincial and territorial jurisdictions (Lupart et al., 2005[120]; Parekh, S. Brown and Robson, 2018[45]). 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 (2005[120]), nevertheless point out that it can also lead to a variability in practices. It can turn into a disadvantage since it is likely to hinder the establishment of consistent gifted education programmes and evaluations of policies at the national level.

As mentioned earlier, similar dynamics can be found in the United States, where each sub-national 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, though they follow common national guidelines (Sastre-Riba, Pérez-Sánchez and Villaverde, 2018[16]). 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[30]; Balestra, Sallin and Wolter, 2020[121]). A similar dynamic exists in Germany where, while most federal states' education acts refer to giftedness, there is little experience sharing between sub-national education authorities and no strategy at the national level (Fisher and Müller, 2014[118]).

[12] 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[106]).

That said, whatever the legal framework and the governance structure are, a common feature in most countries in terms of gifted education programmes is the adaptation of the curriculum through acceleration or enrichment strategies.

2.3. Curriculum policies: adaptation of the curriculum to respond to the learning needs of gifted students

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[122]). In the face of growing diversity, it is important that policy makers contend with how to ensure curricula 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 also 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[123]).

Two main strategies are used in order to support these students 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 (H. Wu, 2013[124]).

2.3.1. Acceleration strategies

The idea of academic acceleration as an efficient practice to improve high-ability students' performance was already introduced by researchers in psychology at the beginning of the 20th century, and gained popularity in the 1940s, at least in the United States (Steenbergen-Hu, Makel and Olszewski-Kubilius, 2016[125]). 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[126]). In other words, this strategy consists of providing a student with a curricular programme at a faster pace or at a younger age than their peers.

There can be a variety of practices associated with acceleration. Typically, acceleration might include grade-skipping, early entrance to kindergarten, school or college or subject-specific acceleration in order to provide an advanced instruction more likely to respond to the student's ability or potential (Steenbergen-Hu, Makel and Olszewski-Kubilius, 2016[125]). Such a strategy in gifted education is justified by the fact that the teaching rhythm might be too slow for gifted students and demotivate them, an issue likely to put some in a situation of emotional and motivational vulnerability likely to increase through time and grade (ANEIS, 2017, p. 52[127]). The goal is therefore to provide a student with a curriculum reaching a level of complexity in adequacy with their higher-than-average abilities and skills.

Zhang (2017[128]) explains that in China, for example, acceleration is the most common strategy to address gifted learners' academic needs. A typical education plan for a gifted learner is to spend four years in primary education and four years to complete secondary compared to respectively five to six years and six to seven years for other learners. Gifted learners therefore reach tertiary education at the age of 14 or 15 and are expected to complete a Ph.D. study within two years.

In Austria, 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 that nine years of schooling must be completed (Weilguny et al., 2013[129]). At the time of writing, national implementations for a "new upper level scheme" is being introduced to academic secondary schools (AHS), secondary technical and vocational schools (BMS) and colleges for higher vocational education (BHS) that "will increase the intensity of the learning/studying

process, which will provide an improved overview of individual learning deficits." [13] One of the key elements of this reform is the development of a package for gifted students to be able to complete curriculum areas before other students. In Finland's educational policies, while gifted students are unlabelled 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[130]; Laine and Tirri, 2016[131]).The available research on acceleration tends to agree on the benefits of accelerated programming. For example, Steenbergen-Hu and Moon (2011[132]), in a meta-analysis synthesising 38 primary studies conducted between 1984 and 2008, found that acceleration might have a positive impact on high-ability learners' academic achievement and, to a lesser extent, socio-emotional development. These findings were re-affirmed in a similar study conducted by Steenbergen-Hu, Makel and Olzewski-Kubilius (2016[125]) a few years later.

Academic acceleration is nonetheless subject to controversies (Kanevsky and Clelland, 2013[133]; Worrell et al., 2019[4]). There tends to be a growing resistance to this practice by teachers and parents. Particularly, various teachers argue that it has a negative impact on gifted students' socio-emotional well-being and creates issues of adaptation and isolation; ultimately, acceleration may have more negative than positive outcomes for gifted students (H. Wu, 2013[124]). In addition, because grade-skipping used alone does not necessarily involve differentiated teaching methods to adapt to the student, acceleration may be considered limited for inclusion purposes (*Ibid.*). Nonetheless, some research tends to suggest contradictory results. A recent longitudinal study conducted by Bernestein, Lubinsku and Benbow (2021[134]) shows that acceleration strategies might in fact not harm the long-term psychological well-being of gifted students. While similar findings have been demonstrated for short-term effect, the authors even suggest that the psychological well-being of participants was above the average of national probability samples.

2.3.2. Enrichment strategies

In comparison with acceleration, "enrichment provides richer and more varied [curricular] content through modification and supplementation of content in addition to standard content in the regular classroom" (Kim, 2016, p. 103[126]) Among the various practices in gifted education, enrichment strategies are the most widely used after acceleration ones. Such methods aim to broaden and deepen classroom activities and curriculum, and to include more material and information that is not provided in regular classroom study (H. Wu, 2013, p. 2[124]). Enrichment opportunities can be offered through different strategies, such as differentiated instruction within the classroom, extra-curricular activities and summer camps. They can also correspond to 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[130]).

According to Renzulli and Reis (1997[135]), 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 with 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 literature review on effective policies and practices in gifted education, Heller-Sahlgren found that enrichment of the curriculum in and out of class tends to have a positive impact on gifted students' outcomes. It seems effective especially when combined with targeted/individualised instruction (Heller-Sahlgren, 2018, p. 27[5]). In an extensive literature review on existing research related to the School Wide Enrichment Model (SEM), Reis and Peter (2020[136]) explain that most studies on enrichment strategies conducted in different contexts show positive long-term results for gifted students and high-achievers' academic performance. The SEM, which has been implemented in thousands of school districts across countries and provides additional opportunities for enrichment for all students, has proven to generate positive outcomes for gifted students as well as for their non-gifted peers (*Ibid.*). A growing body of research

[13] See https://eacea.ec.europa.eu/national-policies/eurydice/content/national-reforms-school-education-1_en (accessed on 12 June 2021).

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 might have a further positive effect on gifted students' socio-emotional well-being (Kim, 2016[126]). Table 2.2 provides a comparison of the main advantages and disadvantages of enrichment and acceleration strategies.

While there still lacks consistent evidence due to a lack of programme evaluations, it seems that enrichment methods are increasingly preferred over acceleration used in isolation. For example, 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 as acceleration strategies (Tourón and Freeman, 2017[43]).

Table 2.2. 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/her 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 among older peers can create isolation situation for example); • According to teachers, it has more negative outcomes than positive ones (e.g. negative impact on the socio-emotional dimension of well-being) which makes it increasingly controversial among parents and educational staff;

While there tends to be a preference for one or the other, increasingly, the two are being used collaboratively. Hong Kong, China, for example, is considered to have one of the most developed gifted education policies among China, Korea, Japan and Singapore. It adopts a myriad of approaches to school-level provision which includes advancement/acceleration (mainly early admission and grade-skipping), enrichment and pull-out programmes (Ibata-Arens, 2012[38]).

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 changes in New Zealand's gifted education provisions over 10 years showed an increasing preference for a combination of enrichment and acceleration approaches as opposed to either one being used in isolation (Riley and Bicknell, 2013[137]).

Acceleration and enrichment programmes are therefore not necessarily used exclusively and can be combined depending on the context, resources and needs of each student. These strategies can also work alongside other methods such as ability or cluster grouping and pull-out programmes that also heavily rely on the capacity of the school to allocate appropriate resources and qualified teachers able to rely on diversified pedagogy (see section 4.1).

2.4. Educational offer and learning settings: between egalitarian aspirations and the specific needs of gifted students

As more countries have paid attention to gifted students in policy frameworks and curriculum policies, an ongoing concern has been whether gifted students should benefit from specific educational provisions and if so, to what extent. 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. The process to reach such an aspiration might differ across countries and often remains an open question. The availability of separate educational settings for diverse groups, a topic greatly debated among academics and policy makers, might be even more controversial when paired with gifted education because of the aforementioned concerns regarding elitist practices and lack of equitable access to gifted programmes (Eyre, 2011[50]; Heuser, Wang and Shahid, 2017[30]).

While some countries are concerned about undermining egalitarian values, others consider that gifted education can positively affect individual, social and economic outcomes (see section 1.7). Advocates for the use of specific

provisions such as selective schools maintain that these might provide social and emotional benefits for gifted students and help them reach their full potential, which will ultimately benefit society. 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[57]; Eyre, 2012[122]).

In some countries, national and sub-national education authorities have placed gifted education among their priorities and established selective schools. These schools usually focus on specific domains, including sciences, languages and music. The prevalence of one field over others depends on national historical and social dynamics. 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[138]). Besides several gifted research centres and institutes, Korea has various gifted secondary schools, a majority of which focus on mathematics and science with some also including arts. Those are publicly funded and have a number of teachers who are specialised in gifted education. It also has public schools offering gifted classes to primary and secondary students (Cho and Suh, 2016[39]).

Nonetheless, the existence of selective schools and services for gifted students raises significant questions, mainly regarding school segregation. As some countries allow for separate provisions and admission decisions based on grades, opponents to gifted education are concerned about the emergence of elitist schools and exclusionary practices. In certain cases, like in Australia, there has been an effort to consider equity issues by convening gifted students from different geographical locations and helping them reach their full potential (Box 2.1).

In many countries there might be few to no special schools for gifted students. In this case, gifted education is exclusively provided either within the regular classroom or through extra-curricular activities, usually categorised as enrichment programmes. In Switzerland, for example, gifted students are most often left in mainstream schools, and special provisions are offered only outside the classroom, mainly through enrichment activities (Mueller-Oppliger, 2014[35]; Balestra, Sallin and Wolter, 2020[121]). In Austria, a special grammar secondary school for highly gifted and talented children was created in Vienna in 1998, which was highly contested. Today, Austria has very few special schools for gifted and talented and such an education is to be implemented in mainstream schools (Resch, 2014[60]).

In mainstream schools, differentiated pedagogy strategies (see section 4.1) are increasingly praised by researchers and educational staff (Heller-Sahlgren, 2018[5]; Dixon et al., 2014[139]), though there are concerns about the challenges related to implementation of such strategies and the lack of available training for teachers (see section 3.1). Such strategies are rarely mentioned in national frameworks and often depend on the school culture and/or teachers' initiatives.

Furthermore, according to different studies, some of the most efficient educational provisions for gifted students seem to be school summer camps as part of an enrichment strategy (Kim, 2016[126]; H. Wu, 2013[124]; Heller-Sahlgren, 2018[5]). For example, a 2006 study led by Michael S. Matthews used longitudinal data from North Carolina, United States, 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[85]).

Box 2.1. Selective schools for gifted students in New South Wales and Victoria, Australia

Australian policy context: increasing emphasis on gifted education

The 2015 curriculum, being revised in 2020, 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 2015 national curriculum has encouraged all states to give a fresh impulse to gifted education.

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

The use of selective school programmes in Australia varies widely across the different states and territories. Practices to respond to the needs of gifted students span from the use of accelerated learning programmes based on selection tests to selective schools. In these programmes, gifted students can be placed with like-ability peers or not. The states of New South Wales (NSW) and Victoria provide two examples for the use of selective schools.

NSW selective schools for gifted students

In NSW, different selective secondary schools 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 secondary schools, agricultural secondary schools, partially selective secondary 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 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.

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 initiatives 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.

Source: NSW Department of Education, (2018[57]), *Review of Selective Education Access: Findings and Action Plan*, http://education.nsw.gov.au (accessed on 3 December 2021).

2.5. Resourcing gifted education

How gifted education is funded varies greatly across countries. National and sub-national education policy priorities, the structure of the education system and the way in which educational resources are managed tend to have a significant impact on the funding of gifted programmes. Therefore, in the same education system, public funding for gifted education may significantly vary over time and space according to the national, regional and/or even local support for appropriate programming and interventions.

In some countries, the budget for gifted education comes from government's funds, often complemented with sub-national authorities' resources depending on the type of provision programme. In these countries, there is usually a clear strategy for gifted education, which plays a crucial role in defining the scope of programmes and may help

expand and direct funding. In Korea, for example, gifted schools and programmes are funded by the government through the Ministry of Education and Provincial Offices of Education (Cho and Suh, 2016[39]). When Lithuania's Strategy for the Education of Gifted Children and Young People (December 2005) was published, with its Programme and Measures (January 2006), funding and measures to enhance educational provision for gifted children increased (Eurydice, 2006[42]). The State also manages some schools with specialised provision, including arts gymnasia and conservatories that provide specialised training in the arts for talented children (Shewbridge, 2016, p. 37[140]).Most countries do not have an established central budget specifically dedicated to gifted education. In the absence of a central mandate, sub-national education authorities are most often responsible for addressing the needs of gifted learners. In federal states, funding for education is typically managed by sub-national education authorities. In the state of Queensland, Australia, for example, budgets are allocated to regions on the basis of student enrolments and the total overall available budget. Funds are usually held by the region to manage gifted programmes' outcomes. A small part can be distributed directly to schools, to strengthen capacity-building activities or implement targeted programmes.[14] 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 merely have one co-ordinator for talent support – the minimum advised according to existing guidelines – another province may choose to invest a considerable amount of its budget in gifted education and develop comprehensive gifted education programmes (Resch, 2014[60]) Moreover, when there is a dedicated budget for gifted education, the resources schools receive for gifted students may directly depend on the share of students identified as such. In Texas, United States, for example, where the funding and identification of gifted students is encouraged, school districts receive money for each student identified up to 5% of the total enrolment in the same district (Hodges, 2018[141]).

In an increasing number of traditionally more centralised OECD education systems, there is a trend towards the decentralisation of budgeting and management responsibilities. This means that regional, local and school levels have gained increasing authority with regards to budgeting, and the allocation of educational resources. Such an approach mainly aims to adapt to the local communities' needs (OECD, 2017[142]). In this logic, sub-national authorities, such as municipalities, and even schools, can take control of funding. Also in this case, there might be a balance to consider between addressing local needs and the heterogeneity in the amount allocated to schools in a same education system. This can have an impact on the amount of resources allocated to gifted education in a same, potentially leading to disparities in the educational offer for gifted learners.

Furthermore, 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 interventions. In February 2019 for example, New Zealand's Ministry of Education announced a NZ 1.27 million (approximately € 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.[15]When the general budget for school that is the basis for the education of all students is used to fund the education of gifted students, with no particular criteria for gifted students, the identification and implementation of gifted programmes might primarily rely on the initiative of the school. Authors from North America, the United Kingdom and Australia identified that such an approach tends to lead to a limited availability of 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 impact the quality of gifted programmes (Kronborg and Cornejo-Araya, 2018[109]; Callahan, Moon and Oh, 2017[123]). These issues have been identified, for example, in several European countries (Tourón and Freeman, 2017[43]). Targeted financial support, mainly through scholarships, can also be given to gifted students. This support can be allocated directly by the state tough the competent authorities, or by private entities promoting gifted and talented education such as Foundations and national/international networks (Mönks and Pflüger, 2005[143]; Eurydice, 2006[42]). In Slovenia, intellectually and artistically gifted students can be awarded a *Zois*

[14] See: https://education.qld.gov.au/about-us/budgets-funding-grants/grants/state-schools/core-funding/gifted-talented (accessed on 12 June 2021).

[15] See: https://www.beehive.govt.nz/release/new-support-package-gifted-learners (accessed on 13 June 2021).

scholarship (*Zoisova štipendija*), which is financed by the state. The selection for this scholarship is primarily carried out in the first year of the secondary school. There are also special private funds and professional associations offering scholarships to talented students (*Ibid.*).

As mentioned earlier in section 1.6, evidence shows that gifted learners from socio-economically disadvantaged and/or diverse backgrounds tend to be underrepresented in gifted education programmes. As such, when designating resources to gifted education, there is sometimes an effort to distribute in a way that retains principles of equity (and aims of access) by targeting socially disadvantaged gifted learners. In Ireland, for example, 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[144]).

In the United States, there exists the Jacob K. Javits Gifted and Talented Students Education Act that first passed by Congress in 1998 and was re-authorised in 2015 through the Every Student Succeeds Act. Besides the promotion of scientific research and support to school, the Act focuses on identifying and catering to students traditionally underrepresented in gifted programmes 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 (approximately € 10.9 million) in federal funds, operates within an egalitarian framework that seeks to reduce gaps in achievement and to promote equality of educational opportunities.[16] Nonetheless, general funds for gifted education are provided by individual states, therefore responding to different criteria. Researchers from the United States suggest that the effect of the Act on gifted education are mitigated and yet to be explored (Hodges, 2018[141]; Kettler, Russell and Puryear, 2015[145]).

The United Kingdom's government "Excellence in Cities" (EiC) policy initiative sought to target gifted students from inner-city schools in disadvantaged areas (urban schools with high levels of social and economic deprivation). The resources allocated to Local Education Authorities (LEAs) and their schools depended on their level of disadvantage (with the percentage of students receiving free school meals used as an indicator of low family income): this ranged from £ 50 (approximately € 55) per student in more advantaged schools, to around £ 140 per student for the least advantaged schools (Machin, McNally and Meghir, 2007[146]). This programme also operated 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 acknowledged that gifted students may "have been hibernating in social situations, given neither recognition nor encouragement" (Casey, Portman Smith and Koshy, 2011[51]; Koshy, Smith and Brown, 2017[147]).

3. Policy approaches and challenges to building capacities in gifted education

The effectiveness of inclusion and equity in education relies to a considerable extent on ensuring that educational authorities and all stakeholders possess the right knowledge and skills. In this sense, policies and practices related to capacity development within a system can play a key role in promoting diversity and inclusion in education systems. Awareness-raising campaigns, the preparation and professional development of school leaders, teachers and support staff, and the preparation of students and parents for gifted education might be essential elements to enhance gifted students' academic and well-being outcomes and promote their inclusion in educations systems.

Overall, there is consensus 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 of educational support.

[16] See: https://www.nagc.org/resources-publications/resources-university-professionals/jacob-javits-gifted-talented-students (accessed on 13 June 2021).

Nonetheless, knowledge and skills related to giftedness tend to be limited in some areas, such as teacher initial education and career counselling strategies, which again often stems from the idea that gifted students do not need much support due to higher-than-average abilities.

This section aims to identify some of the main practices and challenges related to capacity building in gifted education in OECD countries. It focuses on how awareness of giftedness can be raised at the system level, teachers' education and preparation and mentoring strategies to support gifted learners through their educational journey.

3.1. The central role of teachers: initiatives to initial preparation and professional teacher development

Teachers can have a central role in the identification, support and monitoring of gifted education strategies. As such, teacher preparation is crucial in gifted education policy. Evidence shows that gifted education programmes, from identification and assessment to differentiation and other pedagogical strategies, are significantly more efficiently implemented by teachers who undertook specialist studies in gifted education (Centre for Education Statistics and Evaluation, 2019[53]). Various countries have developed policies and initiatives aimed at enhancing teachers' preparation to respond to the needs of gifted students. Depending on whether giftedness is clearly established in national regulations, they might opt for different approaches. These range from targeted 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.

Some countries might have a clear legal reference to teacher preparation for gifted education. In Korea for example**,** the preparation of teachers is codified in the 2000 Gifted Education Promotion Act, Article 12 (1) states: "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]

Some other countries such as Austria (Weilguny et al., 2013[129]) or Lithuania (Eurydice, 2006[42]) describe the role and preparation of teaching and support staff in official policy documents, while many education systems rely on guidelines and orientation documents, as for example in France (DGESCO, 2019[33]) or Colombia (Ministerio de Educación Nacional, 2015[148]). In these cases, ministries, with the help of associations, often develop standards and establish essential knowledge and skills that teachers need to acquire to be effective in teaching gifted students. These standards aim at enhancing teaching quality for all teachers and give them the confidence to efficiently implement guidelines and programmes for gifted students at the school.

3.1.1. Initial teacher education

It is important that initial teacher education (ITE) includes specific training to develop competencies and skills for ensuring that classrooms and schools are equitable and inclusive for all learners, including gifted students. Knowledge in ITE on how to deal with gifted and talented learners can be mandatory, optional or absent from countries policy and legal frameworks. Overall, the topic of gifted education in ITE can be either a separate subject or integrated in other subjects. In the first case, undergraduate and post graduate programmes might be offered to teacher candidates that enable them to nurture and ensure the development of gifted students, while in the second, giftedness may be part of the topic of special education needs.

Eurydice's 2006 report (Eurydice, 2006[42]) shows that among the 30 countries part of the survey, gifted education-related issues were included on a mandatory basis in ITE in 11 (France, Austria, Slovakia, Hungary, Greece, Estonia,

[17] See: http://gifted.kedi.re.kr/khome/gifted/gedEng/teaching.do (accessed on 13 June 2021).

Finland, Norway, Sweden, and Denmark). In the other countries covered by the studies, the topic was either optional or not mentioned in official documents. Moreover, it was a separate subject only in six countries (Germany, Austria, Latvia, Hungary as well as Greece and Slovenia who also adopted an integrated approach).

Besides, in contexts where higher education institutions enjoy considerable autonomy, it may be up to the individual institution to decide on the status of this issue in teacher education, sometimes leading to great disparities within a same country (*Ibid.*). In Romania for example, while educational guidelines mention the need to include giftedness in ITE, the implementation of such courses depends only on the university's decisions regarding curriculum content. As a result, a few universities across the country offer such courses (Mönks and Pflüger, 2005, p. 133[143]). In Colombia, the Technical Orientation Document for gifted education in the framework of inclusive education (*capacidades y/o talentos excepcionales*) recognises that tertiary education institutions have a key role in promoting the topic in ITE to address gifted learner's needs in school (Ministerio de Educación Nacional, 2015[148]). While some universities offer degrees focusing on giftedness, the Colombian Orientation Document advises that all higher education institutions offering ITE develop a plan to provide future teachers with the tools to become experts in enabling all learners, including gifted ones, to reach their full potential.

As the interest for an inclusive education approach has grown, more countries have included minimum knowledge requirements on inclusion and diversity in ITE, though it is still lacking in many contexts (UNESCO, 2020[66]). In some countries like Austria, while studies show that topics related to the education of gifted students tend to be rare and only marginally addressed (Weyringer, 2013[149]), there has been an increasing focus on the topic of gifted education in ITE, which has been a separate topic (Reid and Horváthová, 2016, pp. 67-68[150]). In various countries however, while there exists ITE courses on inclusive education, these tend to focus on special education needs, a category from which giftedness is often excluded (UNESCO, 2004[41]).

Finally, in some contexts like in Finland, while capacity building may appear difficult given the lack of explicit reference to gifted students in education policies, Finnish teachers are considered well-equipped. This results from a standard focus on differentiated instruction from kindergarten on (Tirri and Kuusisto, 2013[130]). In other words, even though no training for gifted education as such is provided, teachers are already conscious of how to tailor the curriculum and instruction to the particular needs of gifted students.

3.1.2. Continuous professional learning

As many systems become more inclusive, continuous professional learning is crucial to ensure that teachers are able to respond to more diverse student needs (UNESCO, 2017[151]). Continuous professional learning is also an important tool to ensure that practising 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[152]; Cerna, 2021[3]) Developing the capacity of teachers and school staff to address the needs of gifted students is therefore a core policy lever to promote inclusive education policies and practices. This is especially relevant when acknowledging that special education needs, a category in which gifted students might be found, remain amongst the most needed areas for continuous professional learning by teachers across OECD countries. As TALIS 2018 shows, across countries part of the study, an average of 22% of teachers reported a high level of need for professional learning in teaching students with special education needs, a percentage that exceeds 45% in Brazil, Colombia, Mexico and Japan (*Ibid.*).

In-service training on gifted education-related issues can be provided by governmental and non-governmental specialised entities or universities. In some cases, specialised national associations and transnational networks also offer teachers training opportunities to teachers in gifted and talented education (Mönks and Pflüger, 2005[143]).

The aforementioned Eurydice survey found that in-service training on gifted and talented learners was offered in 18 countries out of 30 for primary and secondary teachers (Eurydice, 2006[42]). In the United Kingdom, Mönks and Pflüger noted already in 2005 that there had been an increasing number of training and professional learning opportunities for teachers in this area (Mönks and Pflüger, 2005[143]). However, while in-service training is mandatory in many European countries, teachers are most often free to choose their areas of interest (Sękowski and Łubianka, 2015[44]), probably generating significant disparities in knowledge and skills to deal with gifted learners. As Tourón

and Freeman (2017[43]) noted in their survey, "68.92% of teacher respondents had not experienced any special training even though opportunities for in-service training were available to them" (p. 63[43]).

In this context, non-governmental organisations tend to have a significant role in the preparation of teachers for gifted education. In countries where gifted education is not or no longer recognised as a policy priority, these organisations can be essential in providing services for gifted students who may otherwise be overlooked within their schools and classrooms.

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[153]). 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[103]).

In the United States, the National Association for Gifted Children (NAGC) and the Council for Exceptional Children (CEC) created national standards in gifted education programming services and 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[154]). 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."[18] In Portugal, the National Association Study and Intervention in Giftedness (*Associação Nacional para o Estudo e a Intervenção na sobredotação*, ANEIS), among various other activities, offers training courses to educational staff and supports school leaders and teachers in the implementation of personalised programmes for gifted learners.[19]

3.2. Impact and importance of teachers' beliefs and attitudes on gifted learners' outcomes

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 lives and their general well-being. In addition, they shape students' learning environment and influence student motivation and achievement (OECD, 2009[155]). Teachers are also essential actors in shaping students' engagement, drive and self-beliefs (OECD, 2013[156]).

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[157]; Fraser-Seeto, 2013[158]; Boer, Minnaert and Kamphof, 2013[103]; Lassig, 2009[159]; Riley and Bicknell, 2013[137]; Polyzopoulou et al., 2014[160]). Similarly, teachers' negative perceptions, stereotypes and prejudices also play a substantial role in decisions on who gets to be identified as gifted, consequently generating significant biases and feeding into issues surrounding the underrepresentation of certain groups. For example, evidence identified that low expectations of minority students or those from low socio-economic backgrounds from teachers could be a significant barrier to their entry into gifted and talented programmes (Casey, Portman Smith and Koshy, 2011[51]; Ford, 2010[55]). This phenomenon has led some researchers to suggest eliminating, or at least encouraging a smaller weight of teacher referral in the identification process (Worrell et al., 2019[4]).

[18] See: https://www.nagc.org/resources-publications/resources/national-standards-gifted-and-talented-education/knowledge-and (accessed on 20 June 2021).

[19] See: https://www.aneis.org/intervencao/ (accessed on 20 June 2021).

Overall, there seems to be consensus in the literature on the fact that greater training of teachers leads to more positive attitudes towards gifted programmes (Lassig, 2009[159]; UNESCO, 2004[41]; Polyzopoulou et al., 2014[160]; Sahlgren, 2018[79]) and gives them the tools to be able to implement good practices to support gifted learner's needs. 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[161]). Moreover, the lack of preparation of teachers becomes 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[162]).

Despite the acknowledged importance of teachers, there is often little attention given to giftedness in initial teacher education and a paucity of continuous learning development opportunities to improve their approach to and ease with gifted programming. 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[30]). Across countries, ITE is considered as one of the most neglected areas of gifted education policy (Reid and Horváthová, 2016[150]). Teachers tend to receive very limited to no instruction in gifted education and/or differentiated education and/or may not implement it because of a lack of support or interest in the broader educational environment (O'Reilly, 2018[110]; Mönks and Pflüger, 2005[143]; Dixon et al., 2014[139]).

For example, Plucker et al. (2018, p. 20[40]) observed that in the United States, even though some states have advanced policy framework on gifted education, only nine require gifted coursework in teacher, school leader and/or counsellor training. The authors nonetheless noted an increase in training opportunities since 2015, when three states required at least one of these groups to take coursework on gifted learners. In Australia, in spite of an apparent focus on gifted education in several provinces, study in gifted or high-ability education is not a mandated part of pre-service education, and very few Australian university schools of education require it as a mandatory degree component (Centre for Education Statistics and Evaluation, 2019, p. 19[53]). Similar issues have been identified across Europe (Tourón and Freeman, 2017[43]) and Latin America where the United Nations Education, Science and Culture Organisation (UNESCO) (2004[41]) noted significant gaps in ITE and continuous professional learning for educational staff.

3.3. Mentoring strategies to support gifted learner's academic and well-being outcomes

As mentioned before, little support is often provided in developing gifted students' 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 other students, they do need to be accompanied in reaching their potential and finding their academic (see Box 3.1) and career path.

Some studies have documented the positive effects of mentoring on gifted students. Academics and practitioners recommend mentoring programmes because they tend to significantly improve gifted students' motivation, self-worth and achievement, and help develop positive adult relationships (Ball, 2018[163]). 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 forms of mentoring is the relationship between a teacher and his/her students as the latter often look to their teachers for advice, direction, and assistance in learning (Bisland, 2001[164]). This kind of mentoring can be found at every level of schooling and university, mostly for newly arrived students.
2. *Mentoring with an older student*. In this type of mentoring, a younger gifted student talks about career decision and transition with an older student. It seems to be a highly efficient

strategy to reduce gifted student's anxiousness in relation to transition (Benson, 2009[165]). Moreover, it proved to have a particularly positive effect on gifted students from a disadvantaged background and gifted minority students who can be more isolated than others (Bisland, 2001[164]; Centre for Education Statistics and Evaluation, 2019[53]).

3. *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[166]).

There is no one-size-fits-all solution, that is, no subscribed mentoring programme is 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 (Bisland, 2001[164]).

Some countries acknowledge the importance of mentoring strategies for gifted learners' academic and well-being outcome. For example, New Zealand included the importance of mentoring in gifted education programmes, stating that this approach must take into account the specific needs of Māori gifted students (Ministry of Education, 2012[15]). The document also states that besides providing practical information to students, mentoring strategies are essential "to nurture the social and emotional aspects of giftedness through empathetic companionship. Schools need to facilitate mentorship programmes by offering training to mentors and students on their roles in the partnership and appointing a school-based co-ordinator" (p. 67[15]).

Finally, while mentorship programmes often focus on short-term role-modelling, 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 provides emotional support (Subotnik et al., 2010[167]). The programme enables gifted learners to be continuously challenged and develop specific 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 – and perhaps a majority –, on the other hand, may require psychological support to cope with challenging and competitive environments (*Ibid.*).

Box 3.1. Mentoring gifted students to facilitate transition to upper secondary school

Melvin B. Belson, a 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 experienced similar anxiety issues and confusion in relation to the work overload and new expectations. He observed that gifted students experienced similar levels of social and physical anxiety. However, his study suggests that they require special attention for two reasons: they tend not to be considered at risk because of common views on giftedness though they may 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 that teachers' advice 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 interest for gifted students. It allows to access life stories of individuals with a similar experience and provides gifted students with support to understand 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, M. (2009[165]), "Gifted Middle School Students Transitioning to High School: How One Teacher Helped His Students Feel Less Anxious", https://files.eric.ed.gov/fulltext/EJ835838.pdf.

3.4. The importance of civil society organisations and networks for building capacity and promoting collaboration to advance gifted and talented education

Civil society organisations and communities can have a central role in achieving inclusive education. They might help advance and promote inclusion in education in many ways, including through education service provision, advocacy and scrutiny of government actions (UNESCO, 2020[66]). Civil society organisations are rather active and seem to have a crucial role in raising awareness and building networks to advance the state of gifted education.

Myths, misconceptions surrounding giftedness and the lack of attention given to gifted learners in certain contexts highlight the importance of building capacity and cooperation on the benefits of gifted education and its contribution to inclusive education systems more generally. Numerous national, regional and international organisations and networks seek to do so by facilitating research and providing resources and materials that are beneficial for schools, school leaders, teachers, parents and communities.

The United States NAGC (National Association for Gifted Children) supports and develops policies that respond to the diversity of gifted and talented students. This organisation disseminates research used by a range of stakeholders and further supports professional development, advocacy, communication and collaboration with other relevant organisations.[20] Based on academic research, NAGC also created a list of myths to deconstruct about gifted students.[21] 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, ANEIS[22] supports schools across the country in identifying learners, training teachers and providing socio-educational support. The association released in 2017 a comprehensive report aimed to fill gaps in knowledge on giftedness and guide educational staff on how to promote the inclusion of gifted students (ANEIS, 2017[127]). Some governments also develop their own guidelines in partnership with academics. This is the case of the French Ministry of Education that, under its new orientation towards inclusive education, recently published a guide on addressing gifted education (DGESCO, 2019[33]).

International entities have also worked on raising awareness of giftedness. For example, the World Council on Gifted and Talented Children[23] is a worldwide advocate for gifted children that holds a biennial World Conference. This conference provides the opportunity for educators, researchers, parents, psychologists and others interested in gifted education to share their experience, knowledge and information on giftedness and gifted education. At the regional

[20] For an overview on the Association, see: https://www.nagc.org/ (accessed on 22 June 2021).
[21] See: https://www.nagc.org/myths-about-gifted-students (accessed on 22 June 2021).

[22] See: https://www.aneis.org/ (accessed on 22 June 2021).

[23] See: https://www.world-gifted.org/ (accessed on 22 June 2021).

level, the European Council for High Ability[24] enables the coordination of most European countries. It seeks to act as a network that promotes the exchange of information among educators, researchers, psychologists, parents and all those interested in high ability, including high-ability students themselves. The primary objective is to enable different stakeholders to share their knowledge and experience of working with gifted individuals and to promote initiatives to advance the education of gifted children and youth (Sękowski and Łubianka, 2015[44]).

In various countries, attempts to generate national awareness of giftedness are undertaken through days or weeks dedicated to the field. In 2011 and 2013, the national Gifted Education Awareness Week[25] initiative was created by the Gifted and Talented Ireland and promoted through Gifted and Talented Network Ireland. The week aims to "dispel some of the myths and misconceptions surrounding gifted education and raise awareness on 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 "Mythbusting". The Blog Tour enables individuals to share their experiences, stories and views about giftedness- ranging from the experience of being a gifted learner or raising, teaching or counselling a gifted student.[26] Australia also has a Gifted Awareness Week led by the Australian Association for the Education of the Gifted and Talented 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."[27]

4. Importance of school-level interventions to promote the inclusion of gifted students

While national policies for inclusion are central to the creation, shaping and sustainability of gifted programmes, their implementation lies critically at the school level. Consequently, promoting high-quality school-level interventions to support the inclusion of gifted children while ensuring that schools have resources for effective implementation is key.

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. Teaching gifted learners in the regular classroom: differentiated pedagogy strategies

The diversity of student needs can be addressed through various strategies in the classroom. In order to respond to diversity in the classroom, gifted education programmes often rely on a differentiated pedagogy, which can also be merely called differentiation (ANEIS, 2017, p. 41[127]; Eyre, 2012[122]). This notion refers to educational strategies used by teachers and other educational staff based on a flexible education which adapts to the personal students' individual cognitive and psycho-social characteristics. Differentiation "means building instruction from students'

[24] See: https://www.echa.info/ (accessed on 22 June 2021).
[25] See: http://gtnetwork.ie/geaw-2013/ (accessed on 25 June 2021).
[26] See: https://nzcge.co.nz/blog (accessed on 25 June 2021).
[27] See: http://gaw.aaegt.net.au/ (accessed on 2 June 2021).

passions and capacities, helping students personalise their learning and assessments in ways that foster engagement and talents, and encouraging students to be ingenious" (OECD, 2018, p. 6[168]).

Many school-level approaches to gifted programming involve differentiation. Such an approach expects teachers to recognise the different learning abilities of students and to respond appropriately according to students' individual needs (Lawrence-Brown, 2004[169]). 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[99]). The final goal corresponds to "ensuring the holistic development of students' identity" (Bakar, 2016[170]). Regarding the specificity induced by giftedness, such strategies must go beyond traditional personalised approaches to teaching in order to support gifted learners in reaching their full potential.

Table 4.1 below, developed by the Portuguese national association for giftedness ANEIS, provides a general comparison between approaches based on traditional pedagogy and those based on differentiated pedagogy.

Table 4.1. Traditional pedagogy v. differentiated pedagogy

Traditional Pedagogy	Differentiated 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 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 materials.
Facts and ideas tend to have one interpretation.	Facts and ideas tend to have various possible interpretations.
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.
Student assessment is done mostly at the end in order to verify what was understood.	Student assessment is continuous and repeated 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.	Student assessment methods are diversified.

Note: This table proposed by the Portuguese National Association Study and Intervention in Gifted Education (*Associação Nacional para o Estudo e a Intervenção na Sobredotação*) was translated from Portuguese to English by the author.

Source: ANEIS (2017, p. 43[127]), *Guia para Professores e Educadores: Altas Capacidades e Sobredotação: Compreender, Identificar, Atuar [Guide for Teachers and Educators: High Abilities and Giftedness: Understand, Identify and Act]*, https://www.aneis.org/guia/ (accessed on 9 December 2021).

As mentioned in section 2.3, differential pedagogy seems to be highly efficient when coupled with curriculum enrichment strategies. A 2015 study undertaken in the United States showed that less structured teaching methods paired with enrichment models tend to raise performance among gifted children significantly. The research highlighted that a rich curriculum and responsive instruction adapted to gifted learners might an effective strategy to enhance these students' learning outcomes at different levels of education (Callahan et al., 2015[171]).

In countries who see the inclusive education approach as one that allows teaching all learners in the regular classroom while responding to their diverse needs, there tend to be an increasing emphasis on differentiated pedagogies. The adaptation of teaching and learning methods to respond to the specific needs of gifted learners within the classroom is mentioned in some countries' legal and policy frameworks. France, in its Education Act, refers to gifted students (*élèves à haut potential*, previously *élèves intellectuellement précoces*) and requires that special measures and equipment are provided to support these students in reaching their full potential (DGESCO, 2019[33]). Likewise a 2013 White Paper on promoting talent and excellence published in Austria emphasises the need for the design of personalised and differentiated learning processes to boost performance not only in gifted students, but also in all learners (Weilguny et al., 2013, p. 27[129]).

Differentiation can have significant benefits for different groups of students (OECD, 2018[168]). 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]).

4.2. Organisation of learning time and space for gifted students

Within the literature, there is a debate about what organisation of learning in regular schools could cater to the academic and general well-being of gifted learners. This debate is persistent because of the lack of rigorous 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, also referred to as grouping strategies and (2) integrated, or mixed-ability classes.

Some policy makers and practitioners advocate for separate 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[27]; Moon, 2009[77]). 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 amounts of time for accelerated/enrichment learning.

In such settings, students of similar ability or achievement levels learn together. A significant body of research supports the separate classroom method, which enables gifted learners to work with similar ability peers and receive more challenging and appropriate learning than they may receive in a mixed-ability class. It might lead to greater academic achievement and, if time in mix-ability classrooms is also promoted, it can have a positive effect on the social development of students (Reis and Renzulli, 2010[172]; Rogers, 2007[173]; Sahlgren, 2018[79]; Centre for Education Statistics and Evaluation, 2019[53]). More generally, available research highlights that grouping strategies can help improve all students' academic performance if it used with appropriate curriculum and teaching/learning strategies in the classroom (Gentry, 2014[78]).

To be a viable option, separate classroom approaches must bring together students for a substantial amount of time during the school week (Reis and Renzulli, 2010[172]; Rogers, 2007[173]). VanTassel-Baska (2017[174]), 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[175]) explains that pull-out

programmes work particularly well when the regular curriculum undergoes systematic modifications, and are better suited for students at the primary school level than the secondary school level.

Using My Class Activities as an instrument to investigate the perceptions of gifted primary students in Korea**,** Yang, Gentry and Choi (2012[176]) were able to determine that gifted students who attended pull-out programmes experienced higher levels of interest, enjoyment and challenge from these programmes than they did from their regular classrooms. An acknowledged limitation of this study, however, was the lack of detailed information about the students' demographics, and thus the inability to determine whether, for example, gifted students from low-economic backgrounds have access to such pull-out programmes.

However, ability grouping strategies for gifted students are however subject to significant controversy among educators and academics, primarily because of aforementioned concerns around elitism and gaps or inconsistencies in recent research (Centre for Education Statistics and Evaluation, 2019[53]). Gentry (2014[78]) mentions for example that "[c]onflicting results, conclusions, and opinions exist regarding ability grouping. The practice has been both touted as an effective means for promoting student achievement and decried as an evil force contributing to the downfall of America's schools" (p. 7[78]). Besides these concerns, the authors also identified the potential "Big-Fish-Little-Pond effect."[28] They suggest 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[32]). However, the available literature on the impact of such strategies on gifted students' socio-emotional well-being is still significantly scarce and provides contradictory results (Centre for Education Statistics and Evaluation, 2019[53]).

Ability grouping for gifted students can also occur within the regular (mix-ability) classroom. When using within-class grouping, gifted students are grouped together for specific tasks, subject or activity. In such settings, students identified as gifted may be grouped and receive differentiated instruction while being included in the "mainstream" classroom. Steenbergen-Hu, Makel and Olszewski-Kubilius (2016[125]), for example, found that both specific ability-grouped programmes and within-class grouping for gifted students have a moderate, though statistically significant effect on their academic achievement.

It is, overall, regarded that grouping gifted learners based on ability through approaches such as cluster groupings, pull-out classes and special classes can be very effective when paired with a differentiated curriculum (VanTassel-Baska, 2017[174]). Differentiated learning and specialist-trained teachers is essential to ensure the efficiency ability grouping strategies that may otherwise have negative effects (Center for Education Statistics and Evaluation, 2019[37]).

Furthermore, an approach increasingly emphasised in the literature is "cluster grouping". Although definitions may vary, in the cluster grouping model, students are purposefully placed in classrooms to create a balance of ability and achievement levels in all classes (Brulles, J. Peters and Saunders, 2012[177]).

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[78]):

- Groups of students identified as gifted are placed in classrooms consisting of students with different levels of achievement;
- 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.

[28] 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 (accessed on 4 June 2021).

There has been increasing attention to the use of cluster grouping, mainly because of the development of the inclusive education paradigm, as well as other factors such as budget cuts, and heterogeneous grouping policies that have eliminated programs for gifted students (*Ibid.*). Defendants of this approach emphasise that while it allows for students of different abilities to be in the same classroom, it also makes targeting differentiated pedagogies easier for teachers and can therefore help increase all students' achievement (Brulles, J. Peters and Saunders, 2012[177]).

Though cluster grouping aims 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[178]).

While the available research emphasises the positive effect of ability grouping on gifted students' performance, little seems to be available on the effectiveness of specific differentiation models on learning outcomes in mixed-ability setting (Centre for Education Statistics and Evaluation, 2019[53]). Teachers can also choose to resort to the diversification of teaching materials and carefully designed cooperative learning techniques to encourage students with different abilities to work together and support each other. This can enhance all students' interests 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 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's 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 has to be prepared to intervene if one or several students manifest inappropriate behaviours.

This technique is used to foster critical thinking, collaboration, communication, and creativity skills in the classroom. Moreover, it is 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 (a separate class designed to provide progressive access to the curriculum to non-French speaking students) until 2014, which constituted a highly diverse environment. The project aimed to establish an alternative pedagogy to foster the inclusion of all students, without targeting one specific group in isolation.

In this school, the students identified as gifted can access:

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. A differentiated assessment: instead of evaluating with grades, they assess skills, without grades.
3. An adapted schedule and
4. A differentiated pedagogy within the classroom: a teacher mixes student profiles and creates activities that enhance solidarity and allow each one to work on her/his weaknesses.

A biology teacher has been using differentiated teaching methods to include all students in a 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. Overall, the teacher identified that this method gives significant results in terms of students' motivation and participation.

Source: Information gathered by the author at an international conference on gifted children at Université Paris-Descartes, Paris, France, organised on 20 June 2019 by the National Support Centre for Gifted Children and Adolescents (*Centre National d'Aide aux Enfants et Adolescents à Haut Potentiel*).

4.3. The use of 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 schools (European Agency for Special Needs and Inclusive Education, 2013[179]). 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[180]). Some authors even argue that a well-structured use of technology in the classroom can "proliferate learning" and, in certain cases, is likely to contribute to better student performance (Mashhadi and Kargozari, 2011[181]).

There is consensus within the gifted education literature that technology, if properly used, might improve the effectiveness and quality of gifted education programmes, including by creating online learning communities, allowing distance mentoring practices and supporting the development of critical thinking and creativity skills (Chen, Yun and Zhou, 2012[182]). Siegle (2005[183]) highlighted that technology can, overall, be used to support six type of learning activities for gifted students: (1) digital information/learning resources; (2) e-books; (3) interactive projects; (4) online (distance) classes; (5) publishing platforms; and (6) mentoring resources and activities.

In an extended review of best practices and empirical research on the topic, Periathiruvadi and N. Rinn (2012[180]) found that gifted students tend to express positive perceptions about the use of technology for their learning. Their review also highlights that technology can help gifted students get more engaged, perform better in some subjects and strengthen certain skills such as problem solving and inquiry skills. They nonetheless point out that the literature has mainly focused on the impact of digital technologies on gifted students' critical thinking and for adapting the curriculum. This suggests the need for more research in other areas, such as the impact of technology tools on these students' socio-emotional needs.

Moreover, the wealth of information that can be accessed 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 receive from a teacher, who, in traditional settings, are regarded as the main source of information. Therefore, it can relieve the burden of teachers, make education more flexible and greatly aids them in meeting the needs of gifted students, particularly in differentiated classrooms with students of mixed ability. As such, as argue Chen, Yun and Zhou, technology might have "the potential not only to increase the capacity and enhance the quality of education but also to transform the mode of education" (Chen, Yun and Zhou, 2012, p. 167[182]). 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[170]). 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 students' motivation (Housand and Housand, 2012[184]). Authors nonetheless warn that the use of technology can trigger negative outcomes or inappropriate situations, such has access to too much or sensitive information and computer crimes (Chen, Yun and Zhou, 2012[182]).

In Malaysia, for example, Kebangsaan University tried a "digital classroom" approach – an innovative technique using integration of digital technologies – used at the "laboratory school" of the National Gifted Centre, as a teaching and learning strategy for local gifted students. Teachers integrate digital technologies 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 courses offered by universities around the world; (3) emails; and (4) an interactive communication platform where students can continuously share knowledge and debate with older peers and experts (Bakar, 2016[170]).

While more empirical research seems to be needed to measure the impact of different technical technology strategies on gifted students' outcomes, the literature suggests that access to technology may have a significant impact on the development of talent within the learning environment (Chen, Yun and Zhou, 2012[182]; Periathiruvadi and Rinn,

2012[180]). Using strategies based on technology can contribute to promote student cognition, regulation of learning, and creativity, and prevent talent loss in the long run (Baylor, 2019[83]).

Furthermore, technology can help reduce the gap in access to education for disadvantaged gifted students. Research shows that it can support the learning of gifted students who have physical impairments are live in challenging and remote geographical locations (Chen, Yun and Zhou, 2012[182]). For example, Belcastro's study (2002[185]) 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 portals is highly valued by students, they miss the "interpersonal" social interaction considered necessary to their well-being (Centre for Education Statistics and Evaluation, 2019, p. 12[53]).

While technology can support the learning of gifted students, its use can be challenging for several reasons. In order to implement effectively the use of digital technologies to benefit gifted students, teachers need to be well prepared in both areas. TALIS 2018 estimates that across participating countries, 44% of teachers do not receive digital technology training during their formal teacher education and training and slightly more than 40% of them feel well or very well prepared to use technology in the classroom (OECD, 2019[152]). Gaps in teacher education and training on technology coupled with existing gaps in their education and training on gifted education in various countries (see Chapter 3) might bring significant challenges to the implementation of such practices. Consistent digital technology skills for teachers are needed not only to promote gifted students' learning, but also to ensure students' safety and access to appropriate information when using such tools.

4.4. Counselling the gifted: education transition and career guidance for gifted individuals

School counsellors, gifted-education and classroom teachers and other actors such as university-based counselling centres with a focus on gifted individuals can provide appropriate services to support gifted students beyond academic achievement (Peterson, 2006[81]). If properly prepared, these actors can have a central role in supporting gifted students progressing through the education systems and make decisions about their professional career.

First, well-designed transition programmes[29] to orient students and help them progress through and after the education system are essential elements of inclusive education systems. Moreover, comparative studies, while highlighting the need to improve the existence, diversity, relevance and transparency of different pathways, advise the design of specific support to young people who could be left behind so that all students advance to further education and employment (OECD, 2012[186]).

In the specific case of gifted students, research has identified that transition programmes can be highly beneficial if they take into account and adapt to these students' needs. Existing research suggests that these students may adopt different decision processes and require special support in relation to counselling and guidance that take into account their specificities such as asynchronous development and motivation-related issues (Jung, 2017[187]; Kerr and Sodano, 2003[188]; Wood, 2010[189]). As an example, Benson (2009[165]) observed that dropouts were higher where strategies aiming at supporting gifted students transition throughout the education system were fewer. His study also highlighted that peer-to-peer mentoring can also be efficient in supporting such transition (see Box 3.1).

Furthermore, several authors have stressed the importance of giving attention to transitions beyond compulsory education for gifted students. For example, adhering to Gagné's model, Greene (2005[97]) for example maintains that

[29] A transition programme is here defined as a school-level strategy implemented to support students (e.g. through counselling, mentoring, social support) transitioning from one school year to another, from upper secondary to higher education or from education to work.

career counselling is a necessary aspect of talent development and that it must be infused into educational and socio-emotional support as part of a life-long process.

Mendaglio (2013[32]), focused on gifted students' transition to university. He 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 likely to face a higher level of anxiety and loss of confidence, which can result in underachievement, loss of motivation and largely affect aspirations for their future. Mendaglio nonetheless acknowledges limitations due to the generalised absence of consistent research and data in this area. Likewise, Chen and Wong (2013[190]) point out challenges that might be specific to gifted students when making career choices, such as a narrow-mindedness regarding the domains of interest and a tendency to perfectionism that can impede them from choosing certain career paths because of an acute fear of failure or to respond to family and educators' expectations.

Despite these considerations, there seems to be a generalised lack of practices and empirical research on the benefit of counselling to support gifted students progressing within the education system and to orient them with their career choices (Wood, 2010[189]; Chen and Wong, 2013[190]; Smith and Wood, 2018[191]; Mendaglio, 2013[32]). While there has been significant progress in understanding how adolescents make decisions about to their future career, there is still little research on this topic regarding students with higher-than-average abilities.

To tackle this issue, the literature further emphasises the need to focus on the necessity to include giftedness in school staff education and training. It first stresses a need to strengthen the education and training of school counsellors to foster practices that respond to student diversity, which might equip them to better respond to gifted students' needs in terms of career orientation. This may particularly benefit students for whom giftedness intersects with other dimensions such as gender, gender identity, sexual orientation and ethnic background, confronting them to specific challenges (Smith and Wood, 2018[191]) Second, there might also be a need to strengthen teachers' initial education and professional development since teachers can have a decisive role as mediators, even mentors, regarding gifted students' career decision making (Watters, 2010[192]; Greene, 2005[97]).

4.5. 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. 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", including for gifted students (Koshy, Smith and Brown, 2017[147]). Increasingly, school-family partnerships and community-centred approaches are recognised as highly efficient in supporting all students, including gifted ones, and help them achieve their potential (Matthews and Menna, 2003[193]; OECD, 2019[194]).

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[44]). 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[67]).

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[195]; Koshy, Smith and Brown, 2017[147]; Wellisch, 2020[196]; Paul, 2018[197]). Furthermore, parents can be pillars in gifted education when they receive relevant information and resources. Bicknell (2014[195]) 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.

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.[30] Ministries of Education can also provide guidelines not only for teachers, but also for parents to understand how to identify and where to ask for support if they think their child is gifted. One example stems from Austria which 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 a personalised form of gifted education", while also ensuring that all perspectives/views are incorporated in the process (Stahl, 2014[198]).

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 launched three major policy initiatives between 1999 and 2010. They aimed to enhance identification, participation and access to the 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 programme. 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 the family and in the neighbourhood.

Sources: Koshy, V., Smith, C. and Casey, R (2018[161]), "Parenting 'gifted and talented' children in urban areas", http://dx.doi.org/10.1177/0261429414535426; Koshy, V., Smith, C. and Brown, J. (2017[147]), "England Policy in Gifted Education: Current Problems and Promising Directions", http://dx.doi.org/10.1177/1076217517750700.

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

[30] See: https://www.ero.govt.nz/publications/partners-in-learning-good-practice/successful-engagement-good-practice/ (accessed on 28 June 2021).

community or other parents who can support in meeting the educational needs of these children (Manasawala and Desai, 2019[199]).

5. Evaluation and monitoring of the inclusion of gifted students in education systems

Evaluation and monitoring can help generate confidence in given policies, strengthen weak areas and inform future planning and action. In education, "[m]onitoring and evaluation needs to take place at an institutional level to ensure that policies and schemes operate in the same way, but also at a personal (pupil) level to monitor progress of individual children" (White, Fletcher-Campbell and Ridley, 2003, p. 30[47]).

Monitoring and evaluation systems for reviewing gifted students' progress, school initiatives and national policies receive little attention within the giftedness literature. Few consistent studies provide an account of the impact of gifted programmes at different levels of the education system. This can be problematic because as a specific group, "students who are identified as gifted also need to be continuously assessed on their progress, and provided with appropriate educational programmes or provisions" (Cao, Jung and Lee, 2017, p. 164[46]). These educational programmes, in return, need to be continuously monitored.

This last section aims to highlight gaps and challenges in the area of monitoring and evaluation, as well as to identify some previous and current practices related to the evaluation and monitoring of gifted education initiatives at the system, local and school levels.

5.1. The importance and challenges of evaluating gifted education programmes and policies

Effective monitoring and evaluation strategies are 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[174]; Callahan, Moon and Oh, 2017[123]). Monitoring and evaluation in gifted education might inform policy development, curriculum, planning, reporting, improvement strategies, budgetary choices, resource allocation decisions, and performance management. In light of competing resources within education systems in general, evaluations can be crucial in ensuring the survival of gifted education.

Since definitions and policy priorities related to gifted education might vary across and within countries (see Chapter 2), gifted programmes might vary in scope, purpose and degree if development. Gallagher (2006[200]) distinguishes between two types of programme evaluation. A summative is one whose data is collected for external purposes (e.g. for funding agencies), and that puts an emphasis on outputs. In doing so, summative evaluations, by evaluating the efficacy of gifted programmes in terms of outputs, are essential to ensure the continuity of these programmes. In contrast, formative evaluations are conducted for the purposes of the administrators and staff within the programme. These evaluations focus on the inputs and seek to determine whether a programme is effectively implemented and how it may be improved.

An important element of evaluation in gifted education is the collection of relevant data to assess the effectiveness of a policy or programme. To assess such effectiveness, policy makers and coordinators of gifted programmes might rely on data on gifted student achievement, by assessing students' academic outcomes and their progress over time. In addition, estimating such progress allows to communicate to parents and students, educational personnel and policy makers how teaching should be adapted and improved to respond to the needs of students (OECD, 2013[201]). Nonetheless, as explain Neumeister and Burney (2019[202]), while quantitative results are required to generate

evidence that justify programmes and recommendations, evaluation must also provide qualitative data (e.g. through interviews, observations, survey). These may help explain results highlighted by quantitative data by better identifying strengths and challenges, and understand the perceptions and issues faced by the different stakeholders involved in gifted education.

Despite the acknowledged necessity of evaluating and monitoring gifted initiatives, a recurring theme within the literature is the weakness and lack of evaluation and empirical research on what type of educational interventions work or not, and whether there is a causality between gifted programmes and the overall success of gifted students (Parekh, S. Brown and Robson, 2018[45]). Such weaknesses may be attributed to several factors, including a lack of capacity building strategies. Monitoring and evaluation can be conducted internally by a team formed of school member staff and/or externally by a team of experts in both evaluation methodology and gifted education (Neumeister and Burney, 2019[202]). In any case, it requires knowledge and skills on programme evaluation and gifted education.

Other significant challenges relate to lack of time and funding, ill-designed programming and, more broadly, a lack of significance given to the issue in educational policy priorities (Riley and Moltzen, 2010[203]; Resch, 2014[60]). However, these criticisms must contend with the acknowledgement that resources can be limited and in reality, a one-size-fits-all approach does not work with the development, implementation and evaluation of gifted programmes. In other words, while general guidelines and orientations at the international and national levels are necessary, gifted education programmes might be designed, implemented and evaluated with consideration to more local contexts.

Besides abovementioned weaknesses, significant challenges in monitoring evaluating gifted programmes and policies at an aggregated level has to do with data collection and as such, with conceptualisation and identification issues. First, the conceptualisation of giftedness may vary, sometimes greatly, between and within countries (see Chapter 0). Second, assessment within the field of gifted education is often viewed in relation to the issue of the identification of giftedness alone (Cao, Jung and Lee, 2017[46]). This means that once gifted students are identified and involved in gifted programmes, there is little to no follow up on their education outcomes. This prevents the collection of consistent data to estimate the impact of programmes and policies. In this sense, a significant challenge for education systems is to go beyond a narrow focus on identification to likewise ensure the continuous assessment of the progress of gifted students.

5.2. Monitoring and evaluating gifted education programmes at different levels

5.2.1. System and sub-system levels

Despite gaps in the area of monitoring and evaluation for gifted education programmes at the system level, a few examples of consistent studies are available. Though insufficient for a consistent cross-national analysis, they may provide an idea for the basis of effective initiatives in gifted education.

In Germany, two internationally renowned longitudinal studies of gifted students have been carried out at the end of the last century. The Marburg Giftedness Project and the Munich Study of Giftedness both started in the second half of the 1980s and were respectively conducted for 6 and 10 years. They focused on gifted student's academic outcomes and personality factors such as their level of motivation (Ziegler et al., 2013, pp. 397-400[204]). More recent system-level evaluations conducted in the Australian state of Queensland in 2010 and the state of Pennsylvania, United States, in 2016-2017 provided interesting results.

The results of these studies are rather similar and aligned with several other findings presented in this paper. Overall, they highlight:

1. The beneficial effects of gifted education programmes on gifted students academic and well-being outcomes.
2. The need of further investing in teacher professional development, an area in which gaps are often significant.
3. The central role of parents.

4. The necessity of generalising the use of differentiated pedagogy strategies to all schools in order to promote the inclusion of all students (Harreveld and Caldwell, 2010[205]; Ziegler et al., 2013[204]; Paul, 2018[197]).

Nonetheless, little is still known about the impact of gifted education policy – its implementation is most often left to schools and suffers from a lack of monitoring effort to control it (Koshy, Smith and Casey, 2018[161]). As a result, evaluation and monitoring studies at the school level are both challenging and scarce.

5.2.2. School-level

Evaluation and monitoring of gifted education programmes and strategies at the school level is crucial to improve educational provisions aimed at supporting these students in reaching their full potential. In addition, school evaluation plays a key role in ensuring the effectiveness of school-level interventions to support diversity, inclusion and equity in education (OECD, 2015[206]).

At the school level, interventions and programmes related to gifted education are often criticised for failing to provide concrete evidence on their specific effect and benefit for gifted students. According to Sahlgren (2018[79]), research on the effects of gifted education programmes at the local level have not been rigorous or conclusive enough to be used for policy purposes. Though the lack of concrete studies may undermine both the effectiveness 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. Nevertheless, his critique highlights the importance of promoting and ensuring greater evaluative practices across all policy levels.

Furthermore, civil society organisations are, once again, important actors in the evaluation and monitoring processes for gifted education. A prominent example is the NAGC in the United States, which provides guidelines for the use of "multiple, appropriate and ongoing assessments" to determine the learning progress and outcomes of diverse gifted learners in a way that enables all students to demonstrate their gifts and talents (NAGC, 2010[207]).

5.3. Broadening the scope of evaluation

The inclusive education paradigm requires the use of broad indicators, which go beyond mere academic results (UNESCO, 2020[66]; Cerna, 2021[3]). Evaluation needs to take into account all needs of gifted students (i.e. both academic and well-being needs). In line with the concern of further considering gifted student's well-being and self-worth, some initiatives have broadened the scope of evaluation methods. As such, gifted students' motivation, cultural representations and perceptions on education may also be a focus and areas to be incorporated in future education programmes.

For example, 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 extended 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[208]).

Since the literature shows very contrasting views on gifted students' well-being, it will be important to increase the number of such studies to promote more holistic evaluation methods and fill gaps in knowledge regarding the social and psychological well-being of this student group. It might ultimately support the design of more effective policies to respond to their needs.

In New Zealand, the lack of national and international evaluation material leads to a lack of standards to assess the scope and quality of gifted programme provisions in selective, partially selective, and comprehensive government secondary schools (Long, Barnett and Rogers, 2015[209]). Nevertheless, their existing evaluation of programmes in education more widely seeks to take into account the cultural diversity of its students by monitoring whether programmes are bicultural and embody Māori perspectives and values (see Box 1.1). Consequently, evaluations of Talent Development Initiatives developed between 2003 and 2005, and then from 2006 to 2008, included among their 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 achievers and rural schools (Riley and Moltzen, 2010[203]).

Finally, it has been highlighted that several actors should be involved in the process of monitoring and evaluation and that they should apply different methods. Such evaluation processes might include, among other actors, the school co-ordinator for gifted and talented students, teachers, parents who can assess the pastoral as well as curricular effects, and students themselves (White, Fletcher-Campbell and Ridley, 2003[47]; UNESCO, 2020[66]).

Conclusions

This paper shows that countries adopt different definitions, and design and implement various legal frameworks as well as policy initiatives in the domain of gifted education. Despite tensions in policy making and concerns on whether or not to target gifted students as a specific group, most education systems across OECD have recognised giftedness as a distinctive educational area. In spite of equalitarian concerns making some countries hesitant to focus on gifted education, gifted individuals are increasingly seen as: (1) a group with specific needs to be recognised in education and (2) an exceptional source of human capital. Adapting education systems to help gifted students reach their full potential is increasingly acknowledged as necessary to advance inclusive education.

A stronger focus on giftedness and inclusive practices

Eyre (2011[50]) 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 tests. Since the end of the 20th and beginning of the 21st century, however, the focus in some countries 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 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. While some countries such as Korea have focused on gifted education as a separate policy area, allowing separate education provisions, some countries such as France or Portugal are currently making significant efforts towards the design of educational policy frameworks and practices that respond to diversity within the regular school and classroom. In this context, a shift in the field of gifted education towards more inclusive practices in mainstream schools aiming to promote gifted learning for all students is emerging (Lo et al., 2019[210]).

Within this inclusive paradigm, creating an inclusive school culture for all students, including gifted students, is crucial. For example, a qualitative study of ten public 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[209]).

Questions remain and evidence is still scarce regarding what kind of settings are both inclusive for all and appropriate to support gifted students in reaching their full potential. Nonetheless, the inclusion paradigm and recent research highlighted in this paper tend to suggest that having diverse students together in the regular classroom, at least a certain amount of time, might be beneficial for all. Crucially, in terms of education systems' ability to promote inclusion for all, an important goal within schools is to enhance all students' outcomes. On this topic, a recent research conducted in different Swiss cantons provides valuable insights. Balestra, Sallin and Wolter (2020[121]) found that exposure to peers identified as gifted significantly increased achievement in both maths and language for various

other students. They also stress that such exposure does not seem to benefit low-achieving students and that increases in achievement differ according to the gender of the students and gender dynamics within the classroom. Within the broader literature on giftedness, there are however few references regarding how programmes in gifted education could benefit schools as a whole. It is, however, acknowledged that the framework of differentiation can have a rippling effect and be used to support *all* students in fulfilling their potential (Heller-Sahlgren, 2018[5]).

For instance, the School-wide Cluster Grouping Model, mainly used by some Canadian schools, was identified as an effective inclusion practice that respects and can benefit all students.[31] Likewise, the use of School-wide Enrichment models that provides enrichment opportunities to all students while offering specific provisions for those identified as gifted, tends to lead to positive outcomes for all (Reis and Peters, 2020[136]). As a result, pedagogies and enrichment once reserved for the highest achievers considered as gifted were adapted and integrated into the mainstream educational experience for advanced learners in mainstream schools (Neihart and Teo, 2013[211]). Differentiated strategies like the Jigsaw Classroom method mentioned earlier in this paper (see Box 4.1) also could have a positive impact on all students' involvement, solidarity, sense of belonging and educational outcomes. This kind of initiatives is likely to benefit more students, including those who are gifted without being necessarily high achievers.

Strengthening teacher education and training and encouraging differentiated pedagogy strategies

In order to promote inclusive practices within schools and classrooms, school staff, in particular teachers, need to be equipped to respond to diversity. 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[212]).

Educating gifted children can be greatly challenging both practically and intellectually, and depends on each educational context. In this sense, a comprehensive professional preparation related to giftedness coupled with an ongoing training on inclusive practices could significantly enhance both academic and well-being outcomes of gifted students. However, as this paper shows (see Chapter 3), significant gaps remain in this area.

Differentiated pedagogical methods used in combination with other broader gifted education strategies and adapted to each context seem to represent the most promising practices to respond to gifted students' needs and enhance their educational outcomes. For example, in Sweden, recent focus on gifted education has led to more emphasis on individually adapted teaching in the school law and curricula and it is increasingly recommended to use and track differentiation in the classroom (Wolfensberger, 2015[213]). Differentiation can be nonetheless challenging to implement in diverse classrooms and requires consistent research as well as consistent education and training programmes for teachers to be able to do so.

Adopting an intersectionality lens in gifted education

Significant challenges are still to be tackled in terms of equity and equality within gifted education. Mainly, the literature identifies remaining challenges in identification bias and access to gifted education programmes. Certain groups, such as girls, students with special education needs, ethnic minority students and students from disadvantaged socio-economic backgrounds tend to be underrepresented in gifted programmes, highlighting 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 with gifted education by at the same time improving the quality of schooling for the whole student population. For example, "European educational policies, on the one hand, promote an integrative approach, which is adopted in countries following the principle that differentiated teaching should be

[31] See: https://www.aasa.org/content.aspx?id=17446 (accessed on 3 December 2021).

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[44]). In New Zealand, the continuous focus on the inclusion of Māori students in educational policy has led to the incorporation of the Māori perspectives of giftedness in the design and implementation of gifted programmes.

Investing in policy research as well as monitoring and evaluation of gifted programmes

Finally, numerous authors also stress the absence of consistent national and international policy studies on gifted education. The related literature still lacks empirical studies to provide comprehensive guidance for educational policy and practices to support gifted students (Kim, 2016, p. 102[126]). International cooperation and international conferences[32] are, and will continue to be important for experts and countries to reach some common understanding, share good practices and allow for a more consistent international comparison. As suggested by Heuser, Wang and Shahid (2017[30]) 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, it 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" (p. 13[30])*

As highlighted in Chapter 5, monitoring and evaluation of gifted education is probably the weakest policy area. Variations and confusions around concepts and identification, research gaps on gifted education policy coupled with the lack of disaggregated data on gifted students result in a scarcity of available system-level monitoring and evaluation studies. Further encouraging the evaluation of gifted education programmes as well as strengthening monitoring and evaluation initiatives will also be crucial in informing policy makers on efficient practices and promoting the inclusion of gifted students.

[32] See for instance the 17th ECHA Conference happening this year in Porto, Portugal: https://world-gifted.org/event/echa-2020-porto/ (accessed on 3 December 2021).

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