CARE FOR TALENT

Practice and policy of the educational handling of cognitively strong functioning learners in Flanders

KVAB Thinkers Programme - 2025

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FINAL REPORT

Care for Talent – Practice and policy of the educational handling of cognitively strong functioning learners in Flanders

Overview

1. Introduction

In accordance with the current Covenant with the Flemish Government, the KVAB organizes one or two Thinker Cycles every year on the initiative of one of its classes and/or reflection groups. The initiative for this cycle "Reflections on the practice and policy of the educational handling of cognitively strong functioning learners in Flanders" was taken by Joos Vandewalle, member of the Class of Technical Sciences, and Lieven Verschaffel, member of the Class of Humanities. Together with Prof. Karine Verschueren, professor of school psychology at KU Leuven and director of the interuniversity expertise center TALENT, who was closely involved in this initiative from the start because of her great expertise in this field, and with KVAB staff member Inez Dua, they formed the Coordination Team of this Thinkers' Cycle.

This Coordination Team wrote a starting note, in which they discussed the reason for setting up a reflection cycle on this theme, made a proposal for the two foreign Thinkers who would play a central role in the cycle and for the composition of the Steering Committee. They made an overview of the sub-themes that would best be addressed in the Thinkers' Cycle and they mapped out the relevant stakeholders and set a timeline.

After informing the two classes involved about this plan and getting the "green light" from these classes, the proposal was discussed for the first time at the KVAB board meeting of September 28, 2023. Based on this discussion, the Coordination Team drew up a slightly modified new version of the starting memorandum, which was approved in the board meeting of 23 November 2023.

Thinkers and Steering Committee

On 22 December 2023, the two selected Thinkers received an invitation, which they enthusiastically accepted. They are briefly introduced below.

Prof. Dr. Lianne Hoogeveen is professor by special appointment of 'Identification, Support and Counseling of Talent' at Radboud University in Nijmegen, the Netherlands. She is program director of the RITHA program at the Radboud Centre for Social Sciences, researcher at the Behavioural Science Institute, and coordinator of the master specialization 'Gifted Education' of the Department of Pedagogical Sciences. Her research concerns several topics related to giftedness (twice exceptionality, giftedness and low SES, gifted adults, implicit theories of intelligence). As a healthcare psychologist, she advises and treats children, adolescents and adults at CBO Talent Development. From 2020 to 2024, she was chair of the European Council for High Ability (ECHA). https://www.ru.nl/personen/hoogeveen-a

Prof. Dr. Franzis Preckel holds the chair of giftedness research and education in the Faculty of Psychology at the University of Trier. She is also a trusted lecturer at the German National Academic Foundation and co-editor of the scientific journals Gifted and Talented International, Intelligence and Diagnostica. She is co-founder, and from 2018 to 2023 co-coordinator, of the research network "Leistung macht Schule" (LemaS), which develops and tests scientifically based concepts for the optimal support of (potentially) high-achieving students in school. Her main research themes are psychological assessment, intelligence, giftedness, and talent development.

https://www.uni-trier.de/en/universitaet/fachbereiche-faecher/fachbereich-i/faecher-und-institute/psychologie/abteilungen/hochbegabtenforschung/team/prof-franzis-preckel-phd

The Thinkers were free to develop their activities in this cycle and remained completely independent in writing their report with recommendations.

In the same period, the Steering Committee of the Thinkers' Cycle was formed. The role of this group, which, in addition to members of the KVAB and the Young Academy, also included researchers, policy makers and practitioners directly or indirectly involved in the theme of the Thinkers' Cycle, was to provide good advice, support and provide the necessary additional input to the activities of the Thinkers. The composition of this Steering Committee can be found in Annex 1.

Purpose and principles

The aim of this Thinkers' Cycle was a) to gain a better understanding of all kinds of aspects of the attention for and interaction with cognitively strong functioning children and young people in education and the wider society in Flanders, and b) to formulate recommendations on the basis of these insights to improve the policy and practice of education and the broader care for cognitively strong learners in Flanders.

In consultation with the Thinkers, the following list of sub-themes and topics was drawn up:

- Attitudes and evaluations: lay views, implicit theories, values attached to the education of cognitively strong students, media coverage
- Responsibilities and professionalization: teacher training, training of educators, conditions of professional behavior, quality control
- Definition and identification: definitions, criteria, tools and their applications, use of screenings
- Support: offer and approach, talent development and alignment of potential and support options
- Transfer of research-practice-policy: available structures and processes, coordination of research and practice
- Missed opportunities: transitions, identification of minority pupils, intersectional effects, recognized talent domains
- After K-12: Gifted Students in Higher Education and Vocational Training

We would like to highlight already five key principles of this Thinkers' Cycle that were established in advance, together with the Thinkers. First, as the title of the Thinkers' cycle suggests, it was a deliberate choice to focus on the broad group of cognitively strong functioning learners. Second, we aimed to address talent development across the entire life trajectory, but with a focus on the elementary, secondary and tertiary education systems. Third, we believed it was important that the search for appropriate education and care for this group of cognitively strong functioning learners should take into account their holistic personality development. Fourth, we committed ourselves to ensuring that all children and youngsters were involved, including those at risk of being left out because of their socially and/or ethnically vulnerable backgrounds. And finally, our focus on cognitively strong functioning learners in no way implied that cognitively less strong peers or children and youngsters with other special talents (e.g., in sports or the arts) deserve any less attention and care.

Activities

The Steering Committee had a first online meeting on 15 October 2024, followed by an online kick-off meeting with the Thinkers on 8 November 2024, in which the overall planning of the Thinkers' Cycle and the visits and meetings with stakeholders were prepared in terms of content.

Based on this, the Thinkers, in close consultation with the Coordination Team, drew up relevant questions for discussions with the various stakeholders. These questions were sent to the interested parties in advance.

As part of this Thinkers' Cycle, two visits by the Thinkers were organized. The first visit took place from 20 to 23 January 2025; the second from 31 March to 3 April 2025. During these visits, in the presence of the members of the Coordination Team and often also one or more members of the Steering Committee, numerous conversations took place between the Thinkers and all kinds of groups of experts and stakeholders:

- Researchers active in the field of cognitively strong functioning (CSF) learners, as well as in other relevant domains (e.g., motivational psychology, cognitive psychology, inclusive education, ethno-cultural diversity, ...),
- Primary and secondary school teachers responsible for implementing and/or coordinating their school's policies regarding CSF learners,
- Administrators and staff responsible for educational programs, student support, and teacher training at Flemish institutions of higher education,
- Representatives of student counseling centers (CLBs), support centers for learning (LSC), and pedagogical guidance services (PBDs),
- Staff from the Flemish Department of Education and Training, the Cabinet of the Flemish Minister of Education, the Flemish Education Inspectorate, and officials from the European Union,
- Leaders of Flemish educational network organizations,
- Representatives of the Flemish Pupils' Association (secondary education) and the Flemish Students' Association (higher education),
- Representatives of private centers for the diagnosis and guidance of gifted children and adolescents,
- (Board) members of associations for (exceptionally) gifted individuals and/or their parents, as well as individual parents of gifted children and adolescents,
- Representatives from Flemish institutions for educational policy and practice-oriented research (OBPWO, Leerpunt).

In addition to the conversations with all these categories of experts and stakeholders, visits took place to a primary (De Kleine Icarus, Ghent) and a secondary school (De Stroom, Leuven) that have an active policy regarding CSF learners.

Each visiting week ended with a meeting with the Steering Committee. At the invitation of the Coordination Team, three members of the Steering Committee gave a lecture during the first meeting:

- Presentation about the TALENT project as a whole and its relation to the anchor school project of the Ministry of Education, by Karine Verschueren
- Presentation by Giovanni Samaey about his experiences with teaching mathematics to groups of cognitively high functioning upper elementary school students
- Reflections by Dirk Van Damme on the strive for expertise and the care for cognitively high functioning learners in Flemish education from a historical and comparative perspective

Annexes 2 and 3 give a detailed overview of the program and of the participants of the first and second week of visits of the Thinkers, respectively.

The final symposium, which was attended by around 200 participants, took place on 11 June 2025 at the Palace of the Academies in Brussels. For the program, we refer to Annex 4. The main plenary parts of the program are accessible on YouTube. https://kvab.be/nl/activiteiten/de-educatieve-omgang-met-cognitief-sterk-functionerende-kinderen-en-jongeren-vlaanderen

Based on all the material that they received, all the conversations with the experts and stakeholders, the discussions with the Steering Committee, and the feedback during the final symposium, the two Thinkers together drew up a draft of their report, which they finalized on November 1, 2025 after feedback from the Coordination Team, and sent to the KVAB board.

Care for Talent Report

The report '*Care for Talent – Practice and policy of the educational handling of cognitively strong functioning learners in Flanders'* by Franzis Preckel and Lianne Hoogeveen contains three parts: Perspectives and Research Findings, Reflections and Recommendations, and Conclusion and Outlook. It starts with an overview of the various perspectives on identifying and educating gifted students, also presenting the Thinkers' perspective. This perspective forms the basis for their reflections on the practices and policies for educating cognitively highly functioning learners in Flanders. In addition, the Thinkers summarize central research findings on questions they frequently encounter in the field, paying special attention to findings from Flanders. This first part of the report on perspectives and research findings closes with a summary of important milestones in gifted education in Flanders, considered from an international perspective. The second part of the final report focuses on the visits and information that Franzis Preckel and Lianne Hoogeveen experienced during the Thinkers Cycle. It is organized around seven points of reflection that were derived from the list of sub-themes and topics identified together with the Coordination Team and the Steering Committee (see above, *Purpose and Principles*). The seven points of reflection are: Attitudes, Responsibilities and Professionalization, Support in School and Higher Education, Identification, Parents Associations and Private Centers for Diagnosis and Guidance, Research, and Transfer. For each of these points, the Thinkers first summarize their observations and reflections. Subsequently, they formulate recommendations to improve practices and policies for educating cognitively strong functioning learners in Flanders. The third and final part of the report first discusses the specific resources and challenges relating to cognitively strong functioning learners in Flanders, and concludes with seven central recommendations.

Acknowledgements

It is a great pleasure to thank everyone who made this Thinkers' Cycle a success: the members of the Steering Committee, the numerous experts and stakeholders with whom discussions were held, the directors and teachers of the schools we visited, the moderator and the members of the panel that reflected on the findings and reflections of the Thinkers during the closing symposium, as well as the people who gave a testimonial of their "good practices of educational handling of CSF learners" during the closing symposium, the staff members logistics and press and communication of the KVAB for the professional support and the KVAB board for the follow-up involved.

We would like to say a special word of thanks to the two other members of the Coordination Team, namely Karine Verschueren and Inez Dua, for their enthusiastic commitment and

enormous support during the entire process of this Thinkers' Cycle, despite their many other commitments.

And of course, we would like to thank Lianne Hoogeveen and Franzis Preckel for the very knowledgeable and dedicated way in which they fulfilled their role as Thinkers and for their very valuable report. They have succeeded in synthesizing the very large and diverse amount of information from the numerous visits, conversations and discussions that they have had during the two intense weeks of visits and during the very well-attended closing symposium in June in a thought-provoking way, in interpreting all this information from their scientific background and international perspective, and in presenting it to a wide audience. The report forms an excellent basis for the policy and practice of care for CSF learners in Flemish education and society at large.

Joos Vandewalle and Lieven Verschaffel

2. Care for Talent Report by Franzis Preckel and Lianne Hoogeveen

Students differ in their potential for learning and achievement and in the opportunities provided to them in their environments to develop their potential. This results in differences in students' development and educational outcomes. Within this context, one could assume that students with high potential have a general advantage. However, the development of one's potential hinges on multiple factors, and the educational system does not seem to be optimally prepared for students with a high learning- and achievement-related potential. In this report, we take a closer look at these students and their situation in Flanders.

We start the second part of this report by defining central terms and we then present general ways of thinking about students with high potential and the perspective we, the Thinkers, have on this issue. Next, we summarize key research findings about these students, how they are identified, and how they can be supported. We conclude the first part by describing significant developments in Flanders regarding the identification and support of high-potential students, and we discuss these developments from an international perspective.

2.1 Perspectives and Research Findings

Box 1. Definition of central terms

Potential: In general, potential refers to an existing development opportunity that has not yet been realized. For example, having high potential in mathematics means that someone has the personal prerequisites to perform very well in the subject, but does not necessarily mean that they will.

Giftedness: A very high achievement-related developmental potential, which can apply to many or just a single domain.

Talent: An already developed potential, visible in performance, which is usually demonstrated in certain areas; therefore, the concept of talent usually refers to a specific domain (e.g., mathematical or musical talent).

Cognitively strong (CS) learners: Learners who, compared to their peers, demonstrate strong academic skills and achievements and/or high potential for a positive achievement-related development in a domain.

- This definition overlaps with the definition of the term 'cognitively strong functioning (CSF) learners' used within this Thinkers Cycle (see Introduction). During our interviews with various stakeholders in Flanders, we learned that the word 'functioning' can be misunderstood, as it appears to exclude students who are not achieving highly. We therefore use the term 'cognitively strong learners' (CSL) instead of 'cognitively strong functioning learners'.

The ***number of students falling within the group of CSL*** can only be quantified against a specific definition.

For example, if we consider only one domain (e.g. general cognitive ability) and define a CSL as a student belonging to the ***top 10% in this domain***, then ***10% of the student population*** would fall within this group. However, if we consider five domains (e.g. mathematics, languages, natural sciences, social sciences and general cognitive ability), which on average show a medium correlation (r = .50), and define a CSL as a student belonging to the ***top 10% in at least one of these domains***, then ***29% of the student population*** would fall within this group. If we again consider five different domains, which on average correlated with 0.50, and define a CSL as a student, who falls within the ***top 1% in at least one of the five domains***, then ***approximately 4% of the student population*** would fall within this group. [i]

2.1.1 Paradigms and Perspective of the Thinkers

It is important to recognize that people's understanding of the following four questions can differ considerably: What constitutes high potential? Who are the students with high potential? Why should we support them? How should we foster their development? These questions are relevant to both researchers and practitioners, and fierce debates sometimes occur over what constitutes high potential and what kind of support these students need. It is therefore very helpful to understand which general ways of thinking, or paradigms, there are.

In the field of gifted education, Dai and Chen (2013) identified three such paradigms: The gifted child paradigm, the differentiation paradigm, and the talent development paradigm.

In the ***gifted child paradigm***, giftedness is understood as a stable entity comprised of high general cognitive ability, which can be identified early on through general mental ability tests or IQ testing. This status is associated with being different as a person from non-gifted individuals, having special learning needs and capacities, and demonstrating potential for future leadership. Therefore, this group requires special attention and should optimally be nurtured in special programs. This paradigm originates from intelligence research and differential psychology. It is the traditional view of giftedness, and it is often this that people think of when they hear the term 'hoogbegaafd'.

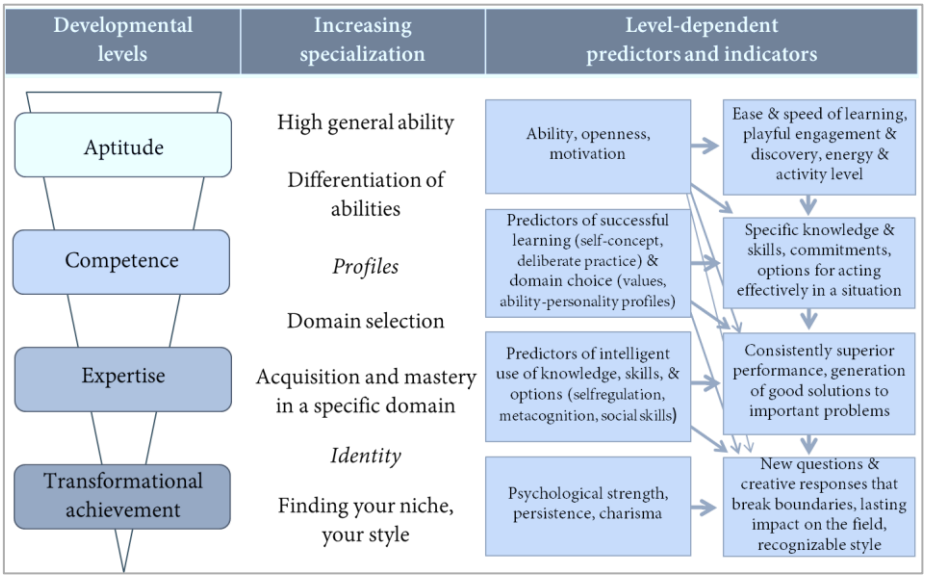
In the ***differentiation paradigm***, the focus is on individuality and emerging needs rather than high potential. The idea is that certain needs and potentials of a student may become apparent in a given situation or at a given moment, and these must then be addressed by adapting education and support to these needs to allow for positive development. These needs and potentials may be evident in one situation or moment but not in others. Therefore, identification is an ongoing process rather than a one-time event. Consequently, there is usually no gifted label or category. Fostering takes place through adaptive and individualized instruction. This paradigm is often closely connected to the school context and has its roots in educational research.

The ***talent development paradigm*** sits between the other two paradigms. Like the gifted child paradigm, it recognizes that people have different levels of potential. However, potential is not only understood as general cognitive ability but is conceptualized more broadly including general and specific abilities, personality traits, and psycho-social skills. Potential is understood as malleable to a certain extent (though not as situation-specific as in the differentiation paradigm). Its development relies the successful interplay of cognitive abilities, personality traits and psycho-social skills and on learning opportunities and appropriate instruction. Identification of potential includes both test results and achievements at a specific time point and ongoing observation. Besides school, fostering should take place in real settings, providing domain-specific authentic learning and training by experts. This paradigm originates from differential and instructional psychology, as well as expertise research.

Our perspective is situated within the talent development paradigm (see Box 2). We agree that all students have potential and the right to develop it. At the same time there are large interindividual differences in potential that go along with specific learning capabilities and needs. Potential does not develop by itself. Students need stimulation, encouragement, and access to information to discover their potential. They need opportunities to learn through appropriate instruction, challenges, training and support, and the offers must match students' learning capabilities. Additionally, students need opportunities to "find their thing" and develop

their strengths. However, there are significant differences in opportunities available to students to develop their potential, mainly due to environmental and background variables.

Box 2. The Talent Development in Achievement Domains (TAD) Framework (Preckel et al., 2020)



The TAD framework describes ***talent development as a long-term process***, from aptitude or initial potential, through competence and expertise, to very high levels of achievement in a specific field. ***Cognition is at the core, but the concept of potential also includes non-cognitive components.*** The specific combination and weight of these components in explaining development can vary across domains (for example, musicality and fine motor control are important for music, but not mathematics), meaning that ***potential is partly domain-specific***. Potential is also ***dynamic*** because the components that make up potential can change over time (see column "level-dependent predictors and indicators"). Initial potential and later achievement are linked by a competence level, which begins with formal instruction (e.g., from teachers in lessons or supplemental programs). Here, individuals acquire knowledge and skills related to one or more domains through systematic learning and practice. Potential now also depends on variables that facilitate successful learning and help individuals choose a domain in which they can further develop their potential. Such variables include trusting one's abilities, valuing the learning content, experiencing the environment as friendly and supportive, and recognizing one's strengths. The competence level illustrates the ***central role of learning opportunities, practice, and appropriate instruction and support*** in talent development. That is, talent development takes place within (learning) environments.

To conclude, within the TAD framework, potential is defined as a person's constellation of cognitive and non-cognitive factors that are positively related to their achievement-related development. It is multidimensional (e.g., comprises abilities, motivation, and openness), partly domain specific (e.g., what comprises mathematics potential differs from what comprises music potential) and dynamic (e.g., it can develop and change over time).

2.1.2 Research Findings

We present research findings, paying special attention to findings from Flanders, for three questions we frequently encounter in the field: Do CSL have special needs? How well do parents and educators recognize high potential in their child/student? What works (best) in fostering CSL?

Do CSL have special needs?

CSL do not have a specific psychological profile. In this sense, they do not form a special needs group that requires assistance because of special psychological or mental characteristics. However, they certainly have ***educational needs*** (Meyer & Plucker, 2022; Olszewski-Kubilius, 2023):

- **Mismatch between learning needs and capabilities and offers.** CSL may be in a learning context in which they do not experience sufficient challenge and learning progress and show less optimal motivation than their peers. In fact, Project Talent found that in Flanders students with high potential (top 10% in terms of cognitive ability) reported lower levels of schoolwork engagement, learning goal orientation, and perceived adequate challenge than average ability students (e.g., Ramos et al., 2021). To support their development, the learning context must provide adequate challenges and support to meet their needs for competence because feeling competent and confident in one's own abilities only arises from real challenges and managing them, in addition to their needs for relatedness and autonomy (Lavrijsen et al., 2024).

- **Underachievement.** Some CSL may be underachieving and show low self-regulated learning strategies, experience little control and report low competence, motivation and value in learning (Fong et al., 2023). Or they lose motivation and value in learning and develop underachievement over time (Ramos et al., 2021). Findings from Project Talent revealed that in Flanders 10% of the CSL had repeated a grade at the end of secondary education, 18% went to a less academically oriented track in secondary education, and 39% had study delay in higher education (Ramos et al., 2019, 2021, 2025). It is important to let underachievers know that they are being seen and that there is an academic solution and to prevent the development of underachievement by providing adequate challenges and support in the first place.

- **Learning strategies and psycho-social skills.** Because many of the CSL sail through early school years with little effort, they may need support with executive functioning skills particularly with transitions to higher levels of schooling or university (Ramos et al., 2022). Moreover, because many of them are performing at advanced levels, they may need specific support in developing higher self-regulatory skills and stress resistance (Olszewski-Kubilius et al., 2015).

- **Misconceptions.** CSL may face misconceptions about giftedness and high potential. Contrary to popular belief, students with high potential do not necessarily exhibit intense experiences, heightened sensitivity or increased vulnerability. In fact, studies have found no systematic differences in mental health, and some have even found better mental health, among these students (Lavrijsen & Verschueren, 2023; Neihart et al., 2002, 2016; Saß et al., 2025). If there are problems, they usually arise from a mismatch between a child or student's needs and the attitudes, expectations, offers and demands of their environment (Preckel et al., 2024), rather than from high potential. Underchallenge seems more problematic than overchallenge. Indeed, studies have found that achievement is related to well-being, particularly among students with high potential (Bücker et al., 2018; Gnas et al., 2022), whereas underchallenge-induced boredom may negatively impact students' motivation, academic performance and well-being (Feuchter & Preckel, 2022).

Box 3. Summary of main findings on characteristics of people with high potential (based on Preckel et al., 2024)

Personality: Cognitive ability is at the core of a high achievement-related developmental potential; it is the relatively best predictor of learning and achievement and differences in general cognitive ability explain between 25 to 50% of the differences in academic performance. Accordingly, CSL have higher cognitive abilities. In addition, CSL seem to be more open to new experiences and ideas and more emotionally stable. They do not systematically differ from other people in their agreeableness, conscientiousness, and extraversion.

Social competencies: CSL differ little from other people in their social relationships and their social skills.

Achievement: Differences between CSL and other people are most apparent in the area of achievement. Most but not all CSL succeed in turning their potential into achievement, and their (academic) achievement is frequently higher than that of their peers.

Perfectionism: Research distinguishes between adaptive and maladaptive perfectionism. Adaptive perfectionism is characterized by taking pleasure in striving for excellence and setting high goals, which are adjusted flexibly when failure is experienced. Thus, adaptive perfectionists try to achieve their personal best. In contrast, maladaptive perfectionists have unrealistically high expectations of themselves and are unable to accept mistakes. CSL do not differ from other people in maladaptive perfectionism but tend to show higher adaptive perfectionism.

Motivation and self-concept: CSL are not necessarily more motivated to perform highly or learn more than other students. Most CSL rate their own achievement-related abilities and their subjectively perceived control over their academic success higher than other students. CSL rate their own appearance and athletic abilities somewhat lower than other students. They are more interested in intellectually demanding leisure activities, in literature, mathematics, and music. In the variety of their interests, however, they do not systematically differ from other people. Overall, differences in interests are better explained by a person's gender than by their cognitive potential.

Findings on **gender differences** in CSL mostly support the gender similarity hypothesis according to which most differences between genders are negligible. Gender differences do emerge for interests and preferences. Girls and women with a high potential seem to have a more balanced interest profile, whereas the interests and preferences of boys and men tend to correspond to their respective strengths.

How well do parents and educators recognize high potential in their child/student?

To adequately support children and students with high potential, parents and educators (as well as other people active in the care system such as school psychologists or pediatricians) need to identify their potential and related learning needs. However, this is not easy: Children's potential is not directly observable but must be deduced from their behavior, which is a very complex process. The child must show relevant behavior, this behavior must be detected and perceived by parents and educators and interpreted correctly (Mack et al., 2025).

Research findings reveal an overall positive relationship of medium size between **parents' judgements** of their child's potential (e.g., cognitive ability) and the child's actual potential, with a tendency to overestimate the child. However, the strength of this relationship varies considerably over studies (correlations between .20 and .85; Schrader & Praetorius, 2018) which

points to further factors influencing the quality of parent's judgements. Studies show that parents' judgements are influenced by the gender of their child: Boys tend to be judged higher and more accurately than girls (Furnham & Valgeirsson, 2007; Mack et al., 2025). In addition, parents tend to judge first-born children more accurately than later born children and more educated parents overall make more accurate judgements than less educated parents (Mack et al., 2025). It is also important to note that judgements of parents show an *academic achievement bias*; parents' judgements depend more on children's academic achievement than on children's cognitive ability. In other words, children with high potential who do not perform well at school are often overlooked by their parents.

The same applies to **teachers' judgements** of students' potential (Gnas et al., 2022; Lavrijsen & Verschueren, 2020). Whereas high achieving students with high potential are identified quite well, those who are average or low achievers with high potential often go unnoticed (Hanses & Rost, 1998). Teachers are more successful in judging their students' academic achievement (correlations of .66 or .63; Hoge & Coladarci, 1989; Südkamp et al., 2012) than their students' potential (e.g., cognitive ability; correlation of .43; Machts et al., 2016). Studies have also found that teachers tend to underestimate the cognitive ability and achievement of stronger learners and overestimate those of weaker learners (Wollschläger, 2016). Teacher judgements of students' potential were also found to be influenced by students' gender and academic self-concept, the socio-economic background of a student's family, their minority status and mother tongue, how well the teacher knew the student, and the average achievement level in a class (Gnas et al., 2022; Lavrijsen & Verschueren, 2020). That is, teachers tend to underestimate the potential of girls, students with lower academic self-perceptions, students from lower socio-economic backgrounds and minorities, students who are less well-known to the teacher, and students in classes with an overall high average achievement level.

This **underestimation indirectly impacts students and their achievement through their self-perceptions and feelings** (see Figure 1). For example, lower teacher judgements and accordingly expectations for nonnative and working-class students in terms of students' potential and performance can raise feelings of hopelessness and academic futility in students, and lower their self-perceptions of their own abilities, which in turn impair their motivation, joy of learning and attitudes towards school and achievement (Agirdag et al., 2013; Gnas et al., 2024). On the other hand, research shows that overestimation correlates positively with students' achievement goals, self-efficacy, experienced support from teachers and peers, academic self-concept, enjoyment of learning, expectation of success, aspirations and negatively with anxiety. Over the course of one year, students who were overestimated showed greater improvement in achievement, participation, self-concept, motivation, and interests (Gniewosz & Watt, 2017; Rubie-Davies & Peterson, 2016; Urhahne, 2015; Urhahne et al., 2010, 2011; Zhou & Urhahne, 2013).

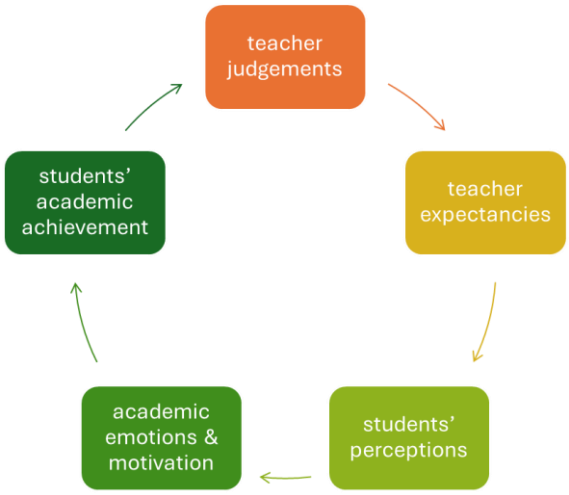


Figure 1. Teacher judgments indirectly impact students and their achievement through students' self-perceptions and feelings.

In conclusion, students with high potential who do not perform well in areas valued by parents and teachers, who come from socially and/or ethnically vulnerable backgrounds, who are female, or whose potential lies in areas not typically associated with them, and who lack confidence in their abilities, are often overlooked and therefore do not receive the support and encouragement needed for talent development.

Box 4. What works in identifying students with high potential?

The definition of CSL in Box 1 includes students who demonstrate strong academic skills and achievements compared to their peers. Teachers are quite successful in identifying these students by their high achievements and strong skills, at least if these achievements and skills fall within domains that are recognized in schools. Students with high potential who do not demonstrate strong academic skills and achievements compared to their peers are harder to identify.

Self judgements and other judgements of one's own cognitive or academic abilities do not work well and suffer from systematic biases (Freund & Kasten, 2012; Zell & Krizan, 2014). The most objective, reliable and valid tool to identify cognitive abilities are **standardized cognitive ability tests** (Preckel, 2010). It is important to note that test results for very young children and those of elementary school age provide only a momentary assessment. While this is valuable, it has limited stability and cannot be used to make long-term predictions (Breit et al., 2024). In other words, recent results are required for significant diagnostic decisions that impact a student's academic journey. Furthermore, as no cognitive ability test is culture-free, specific attention is required when using them with children from non-native backgrounds (Agirdag & De Leersnyder, 2024; De Leersnyder, 2017). Finally, there are quite different cognitive abilities (e.g., logical thinking, creativity, memory, speed of information processing). For people with higher levels of general cognitive ability, the correlations between these more specific abilities are weaker, making a general IQ score less informative (Breit et al., 2022, 2025). Therefore, it is important to use intelligence tests that provide scores for multiple abilities (structure of intelligence tests) and not only an overall IQ score.

Further, for identifying students with high potential it is important to **provide them with opportunities to explore and show their potential**. From a talent development perspective, one would first provide learning opportunities that are stimulating and encouraging and allow for exploration before identifying potential ("First foster, then find!"). Especially students with high potential who come from backgrounds with less learning opportunities need more initial support to explore and show their potential.

As potential in different domains can show up at different time points and ages, identification is an **ongoing process**. For example, mathematical potential can be identified in young children already; however, potential in domains such as psychology or politics cannot be identified before reaching adolescence or even later (Subotnik et al., 2011).

In general, it is important to **base identification on criteria** that align with the respective understanding of potential and that are well-founded scientifically. To do so, it is useful to answer the following questions: What constitutes potential in a domain, that is, what components make up potential? What are the valid indicators of these components? How can they be assessed? How can the assessment results of the different components be combined for identification purposes? Furthermore, when evaluating students' potential, it is important to **choose the right reference group** (for example, minority students should be compared with students in a similar situation, rather than with majority students).

What works (best) in fostering CSL?

CSL are insufficiently challenged with the regular curriculum, so adaptation of the curriculum is necessary. This can be done in several ways, which will be discussed in this section. The mentioned adaptations do not give a complete view of how education can be adapted, however. For example, there are private initiatives, not (sufficiently) documented about how they operate, that are not discussed in this report. They may or may not be beneficial for CSL.

- ***Differentiation within the classroom***

Differentiation within the classroom can be defined as the adaptation of the education according to individual differences of students (Göksu et al., 2023). It accommodates student diversity, making modifications to content, process, product, and/or the learning environment (Nicholas et al., 2024). Until now, differentiation primarily focuses on students working below the expected level. Due to a lack of reference and appropriate training in how to differentiate for these students, there is a risk that teachers are less able and willing to differentiate in a meaningful way for CSL. Teacher efficacy in differentiation, particularly in the context of catering for CSL, is linked to professional development (Nicholas et al., 2024). Another key factor in the success of differentiation is that key stakeholders, like school principals, classroom teachers, and administrators, have a shared understanding of differentiation and of effective practices for supporting differentiated learning and teaching for CSL.

- ***Acceleration***

Most researchers use Pressey's (1949) definition of academic acceleration: "Progress through an educational program at rates faster or at ages younger than conventional" (p. 2). There are numerous ways to accelerate a student's education (Hoogeveen, 2022; Southern & Jones, 2015); some of them are less visible and might be applied by teachers without being known by policymakers, administrators, or even students' parents. The more visible ways to accelerate, like early entrance and skipping grades, seem to be the primary types of acceleration people seem to consider if they think about academic acceleration. These are also the types of acceleration people are most worried about. Other types of acceleration, like combined classes and ungraded schools, which allow for acceleration, are applied in many educational systems, but are less noticed and documented.

Steenbergen et al. (2016) reviewed the available meta-analytic evidence and found that academic acceleration can greatly improve students' academic achievement. Based on this, and several other studies, it can further be concluded that there are neither short-, nor long-term

negative social/emotional effects of acceleration for CSL (Bernstein et al., 2021; Hoogeveen, 2022; Hoogeveen et al., 2012), and that it is an educational adaptation that should be considered for CSL.

- ***Enrichment***

Renzulli et al. (2021) define enrichment as "… experiences and activities that are not a part of the regular curriculum but rather extend and enhance the regular curriculum" (p. 185). Enrichment programs can have positive effects on the achievement and the socioemotional functioning of CSL (Kim, 2016; Reis et al., 2021). Kim examined research on enrichment programs serving gifted students and synthesized the current studies between 1985 and 2014 on the effects of enrichment programs. A total of 26 studies were included in this meta-analysis, and the findings showed that enrichment programs had a positive impact on both gifted students' academic achievement and socioemotional development. As much of the research on enrichment has been conducted by the developers of the enrichment programs themselves (Renzulli et al, 2021), we should be critical about these findings, though. A specific form of enrichment are summer camps for CSL, that offer opportunities to deepen academic knowledge, build self-confidence, and form lasting friendships with like-minded peers (Olszewski-Kubilius, 2003). In the U.S., such programs—often intensive and fast-paced—have shown long-term benefits, especially for socio-economically disadvantaged students, including higher graduation and college attendance rates (Olszewski-Kubilius & Corwith, 2018). Germany's equivalent, the Schülerakademie (student academy), provides high-level courses and collaborative learning experiences, with studies showing improvements in motivation, self-efficacy, and social relationships (https://www. deutsche-schuelerakademie.de). Participants often report clearer academic goals and maintain friendships years after attending. Overall, both U.S. and German summer academies positively impact students' personal, academic, and social development (Olszewski-Kubilius & Corwith, 2018; Preckel et al., 2016).

- ***Pull-out programs***

In a pull-out program, which can be considered as a specific form of enrichment, students are instructed separately from non-participating students for set periods of time each day or week, either within or outside their school (Cash & Lin, 2022). Kim's meta-analysis (2016) supported earlier meta-analyses showing that pull-out programs positively affect the academic achievement of CSL. However, unlike Vaughn et al. (1991), who found no significant impact on socioemotional development, Kim suggests pull-out programs may benefit socioemotional outcomes when a broader range of aspects beyond self-concept is considered. De Graaf et al. (2020) found that attending pull-out programs in primary schools led to better performance in secondary education. Cash and Lin, who compared a self-contained and a pull-out program with the regular program, found mixed findings. Based on their findings they stress the necessity to continue evaluating the ways in which students in various programs for students with high potential differ. Adaptations in the curriculum interact with individual differences to impact students' psychological well-being, so it is important to acknowledge that psychological well-being is only one of the many factors that are evaluated when choosing which programs to offer.

Nicholas et al. (2024) mentioned another important issue we should be aware of: there might be a risk that pull-out programs can take the responsibility for teaching high-ability students away from regular classroom teachers. It must be clear that, also when students join a pull-out program, their program in the regular classroom will need adaptation too.

- ***Ability Grouping and Fulltime Gifted Education***

Ability grouping is the practice of grouping students based on their ability and/or academic achievements. Ability grouping can be part-time or fulltime. We speak of fulltime gifted education when gifted students learn exclusively with other gifted students (Cash & Lin, 2022; Hoogeveen, 2008). Findings about the effects of fulltime gifted education are mixed, concerning achievement and social-emotional well-being (Cash & Lin, 2022; Hoogeveen, 2008). Simply grouping gifted students in special classes does not support their achievement or development. What matters is whether the instruction they receive in this setting is adapted to their needs (Plucker & Dilley, 2016). Zeidner and Schleier (1999) found more positive attitudes towards various facets of the school environment and more satisfaction with school in general. Preckel et al. (2019) found better achievement gains in mathematics and no negative effect on students' academic self-concept. In their review of meta-analyses, Steenbergen-Hu et al. (2016) found six meta-analyses on ability grouping for gifted students revealing an average positive effect of medium strength on gifted students' achievement. The authors concluded that "gifted students benefited from being placed in special groups or programs that were specifically designed to serve those with initial high achievement levels or learning potential" (Steenbergen-Hu et al., 2016, p. 876). As for the impact of ability grouping on non-gifted students, there does not seem to be much research.

Home Schooling

When children are home-schooled, parents direct the education that largely takes place in the home (Valiente et al., 2022). It is not clear how many CSL are home schooled, and there are differences in homeschooling instructions (Connolly-Sporing et al., 2024). There are different reasons for parents to make the decision to homeschool their children. When it involves CSL, Connolly-Sporing et al. (2024) mention educational dissatisfaction: "The lack of intellectual and academic challenge often experienced by advanced or gifted students in formal school settings" (p. 638). Although parents have homeschooled CSL for decades, the research on homeschooled CSL is almost nonexistent.

To conclude, there is a lack of research on the effects of differentiation for CSL and little general or subject-specific guidance for teachers. There is a large evidence base concerning educational acceleration, which indicates that accelerating education is highly effective for CSL, with positive effects on achievement, and generally causing no problems concerning social integration in the new group. Enrichment, and especially summer programs, lead to medium to large positive effects on academic and socio-emotional development (the latter especially for middle school students). The findings concerning pull-out programs are mixed, and special schools or classes lead to medium positive effects of high-ability grouping. Due to the almost nonexistent research on homeschooling, providing comprehensive policy recommendation is, according to Connolly-Sporing et al. (2024) "premature (if not impossible)" (p. 649), and the same applies to the effectiveness of extra-school initiatives (private initiatives, parents).

Generally, we can conclude that various adaptations work, depending on the needs of the student at a certain moment in their school career and the circumstances, like the school and home situation. Important in the decision how to adapt the education of a CSL is the awareness that a "one-size-fits-all" solution does not exist, so that considering the individual student with their individual educational and social emotional needs is paramount. Generally, a single approach is not sufficient for CSL in the long run; most CSL require a combination of support models, which can be implemented in a range of contexts, including special classes.

2.1.3 International Perspectives

Meeting the educational and social emotional needs of CSL is necessary and challenging. To get an overview of gifted education in Flanders, we met several stakeholders and experts, from practice, policy and research (for an overview see Annex 3 and 4). The general impression was that there are many very engaged stakeholders which results in some very good practices. The fact that the KVAB accepted gifted education as a topic for the Thinkers program is an acknowledgement of the societal concern and relevance. This can also be said about the massive and positive response to cooperate in the Thinkers Cycle by all categories of stakeholders. As expected, there is still room for improvement, though. In this section, before focusing on the current situation in Flanders, we will give a short overview of the situation in Europe and in Flanders' neighboring countries, Germany and the Netherlands.

Europe

The difference between European countries concerning identification of and provisions of CSL, is large. VanTassel-Baska (2009) called the development in gifted education in the United States a patchwork quilt, and this also seems to apply to the European situation. Gifted education has, apart from scientific, educational and social dimensions, an important political meaning, which impacts people with high ability and determines social development and changes in the community (Sekowski et al., 2019). That is not necessarily a problem, as long as children and youngsters get the chance to develop themselves on a level in line with their potential. Based on her study concerning the past, present and future of gifted education in Europe, Hoogeveen (in press) concluded that most European countries have the possibility to support gifted students, but this does not always happen in practice. Many countries are focused on inclusive education with some selective options. Some countries do not officially recognize giftedness, yet still meet students' needs through flexible programs. In Greece, gifted students' needs are largely unmet, while Finland's curriculum promotes differentiation for all, including the gifted. Russia lacks a systematic program, focusing instead on Olympiads and elite schools, while in Switzerland, gifted students usually attend regular classes with some enrichment opportunities.

One complicating factor in providing appropriate gifted education is that the target group is not homogeneous (Nicholas et al., 2024; Sekowski, 2019; Thomas, 2018). Where the first theories about giftedness referred to persons (you are either gifted or you are not) and identification, considering giftedness as a measurable and stable characteristic (i.e., the gifted child paradigm), the most recent models are aimed at transaction, talent development and the effectuation of human possibilities (Dai & Chen, 2013; Lo & Porath, 2017). The tendency to put more emphasis on abilities instead of on deficits (Weyringer, 2013), or how Siegle mentioned it during the ECHA conference in Thessaloniki in 2024 *"be a talent scout, not a deficit detective"* (Siegle, 2024) is in line with that more developmental vision.

Hoogeveen (in press) concluded that in all European countries there is still a need for more awareness of the needs of gifted students and a need of training opportunities. People's beliefs about gifted individuals, their needs for support, and their understanding of talent development seem to be the most persistent obstacles in the development of special programs and services for gifted and talented learners. The European Talent Support Network (ETSN) and the European Council for High Ability (ECHA) can play their role in changing that, uniting knowledge and experience.

To give some examples of gifted education in Europe, we focus on the situation in Flanders' neighbouring countries Germany and the Netherlands.

Germany

PISA results show that too few students perform at peak levels. Students with lower levels improved in the last decades, those with higher levels did not. Stocktakings in the early 2000s regarding the support for CSL in the federal states' educational systems (Holling et al., 2001, 2004) were crucial in improving the situation for CSL in Germany and many fostering options developed over the last 2 decades: All federal states have schools with gifted classes or special schools. There are many ways in which acceleration is possible (e.g., there is often no cut-off date for school entry, it is possible to skip one or more grades, and there are programs for secondary-school students already participating in university courses). Many schools offer enrichment activities, such as after-school student working groups, and there are national summer schools for middle and high school students and various student competitions. Furthermore, Germany has a long tradition of merit-based foundations that provide intellectual and financial support in the form of around 300 different scholarships for school and university students, many of them directed towards CSL. Support programs for immigrant and low-SES students include 'Talent im Land', 'Grips gewinnt', 'VorbilderAkademie' and 'Arbeiterkind.de'. There are also many different institutions involved, such as the expertise center 'Bildung und Begabung', parent organizations like the 'Deutsche Gesellschaft für das hochbegabte Kind' (DGHK), and professional organizations. However, many support options take place outside of the regular classroom. To address this issue, the important LemaS project began in 2018. Supported by the Federal Ministry of Research, Technology and Space, as well as the Federal States, an interdisciplinary research network comprising several German universities, developed materials and strategies to support CSL in the regular classroom in cooperation with schools. The International Center for Giftedness Research (ICBF), part of the University of Münster, is also a European Talent Center (ETSN). One of their activities is offering an ECHA qualified teacher training. Compared to Flanders, it seems that support for CSL is more performance-oriented than focused on students' needs and well-being. While needs and well-being are important too, the focus of most programs is on raising performance and engagement and preventing underachievement. Despite many positive developments also Germany faces challenges. For example, the separation between kindergarten and elementary school challenges a continuous education program. Germany has a system of early tracking which is strongly influenced by SES (Socio-Economic Status). There are still many misconceptions about CSL and giftedness and the training of educators and teachers considering gifted education is still insufficient. And within the system of care the student-to-school psychologist ratio is low (on average 5,300 students per school psychologist), and expertise is still lacking.

The Netherlands

Concerning the PISA studies, the situation in The Netherlands is similar to that in Germany: students with lower abilities improved, those with higher abilities did not, which results in too few students with peak performance. The Netherlands has a National Talent Center, the National Talent Center of the Netherlands (NTCN), which focuses on professionals working with gifted students in primary and secondary education or related institutions and practices ensuring that these professionals have access to current and applicable knowledge and expertise. The goal is to build on existing knowledge, answer practical questions readily available, and connect people, organizations, and networks. Many fostering programs and options are developed since in 1988 the Centre for the Study of Giftedness (CBO, now CBO Talent Development) was founded. Initial teacher trainings are insufficient concerning gifted

education. Many teachers in The Netherlands follow the RITHA (Radboud Training on High Ability) training, an ECHA qualified training. In the last few years, a big government financed project, Impact of Activities in Gifted Education (IMAGE), studied the impact of projects, financed by a big government subsidy, in Dutch schools concerning gifted education. In 2007, giftedness profile schools joined forces to form the Giftedness Profile Schools (BPS) association, which aims to represent the interests of gifted profile schools in both primary and secondary education, promote knowledge exchange and build bridges within and outside primary and secondary education. As of 1 May 2025, there are 101 (prospective) members: 60 secondary schools and 41 primary schools.

Concerning mental health care, there is still a lack of knowledge among psychologists. In several universities research is done concerning giftedness. For instance, Radboud University has a research team 'Radboud Talent in Development (RATiO)', doing scientific research on giftedness, focusing on the integration of this research into practice and policy.

Flanders

In 2023, the Flemish Government approved the decree on learning support, with measures for mainstream education, learning support and special education to further shape policy on education for students with specific educational needs (Struyf et al., 2024). Struyf et al. took this as a starting point to advocate for inclusive education, where inclusion is self-evident and segregation is no longer an option. Although this aim for inclusion targets all students, it is mainly focused on those with learning, developmental or physical problems. That does not mean that the different Flemish school networks do not serve the CSL. The diagnostic documentation project Prodia developed a diagnostic protocol for schools and student guidance centers of all educational networks, which strives for more standardized and high-quality student guidance within a continuum of care, focusing on action-oriented diagnostics. Prodia's General Diagnostic Protocol (see: https://prodiagnostiek.be/diagnostische-protocollen/algemeen-diagnostisch-protocol/) is used as a guideline for diagnostics, with different phases in a continuum of care. It forms the broader framework for the various Specific Diagnostic Protocols, of which the Protocol for Strong Cognitive Functioning is one component.

Flanders recently had new legislation in which the extra needs of CSL are recognized: it is made clear that CSL should have access to sufficiently challenging work in order to keep them in mainstream education. Brinckman and Floyd (2021) observed however that, although the social importance of CSL is clear, there is an absence of a relevant specific policy, which is in contrast to other needs and learning disabilities for which separate structural funding and support do exist.

Since the 2020's, there is more attention for the extra needs of CSL, such as specials schools, student competitions, honors programs for university students, extra hours for care, more attention for gifted education in teacher training and special training programs for teachers. There are parent organizations and private centers. In 2020 the Flemish government invested in education and care specifically for CSL for the first time. Twelve anchor schools and one expertise center were appointed with the goal of professionalizing other schools in supporting CSL and improving the evidence base of this support. This 'Example School Project' was extended in 2023 ('Ondersteuningsbeleid CSF leerlingen', 2023-2028), involving 20 anchor schools and an interuniversity Expertise Center, a cooperation between the Universities of Leuven, Antwerpen and Gent. In addition to conducting and disseminating research on CSL, the

Expertise Center supports the anchor schools in evaluating the effectiveness of their interventions and coordinates their professional learning networks with other schools (see also Box 5; section 'Support in School and Higher Education'). From September 2022, Flemish schools have more legal opportunities to accelerate secondary school students. In order to support schools in implementing this acceleration, guidelines were developed within the 'Ondersteuningsbeleid CSF' (Leidraad voor Versnellen, LEV; Van Hyfte, n.d.), to help schools consider the possibilities, consequences, and possible steps involved in acceleration. The University of Leuven also hosts the Leuven Talent Centre of Flanders, part of the European Talent Support Network (ETSN), which shows their openness to European cooperation. Apart from official programs for CSL, specifically in the Anchor schools (part of the Talent Project), there seems to be a rise of private counselling and support centers for these students (see Annex 3). There is quite some documentation that can inform schools, parents and other stakeholders (see Annex 1). Representatives of the Flemish Cabinet see still challenges though, like solutions for very advanced children and clinical cases. They also suggest that evaluation studies on student level should be done.

2.2 Points of Reflection and Recommendations

Before presenting our reflections and recommendations, we would like to emphasize that these are based on our observations and experiences during the Thinkers program. In other words, they are based on the information gathered during school visits and interviews with stakeholders, from the Coordination Team and Steering Committee of this Thinkers cycle as well as the materials provided to us and our own expertise. Our reflections and recommendations did not result from a systematic review and evaluation of all available information. Additionally, our recommendations are based on a talent development perspective (see Box 2).

2.2.1 Attitudes

Based on the interviews it was noticed that issues related to CSL are taken seriously these days, but also that there are misconceptions and ambivalent attitudes towards CSL and support for them. These misconceptions are partly based on wrong dichotomies between equity versus excellence or well-being versus performance. Representatives of the European Union, as well as Wouter Duyck, professor at Ghent University, state that typical schools are not equipped with either understanding or identifying the issue, and, according to Dirk Van Damme, global expert in education, there is an inclusive focus on equity and well-being with the assumption that achievement is negatively related to well-being.

> *"A lot of schools are convinced they need to look at education for this group. The M-decree took pupils in scope that had learning disabilities but not the CSL. Ten years ago CSL was of no priority, nowadays most schools realize they should look at CSL." (representative of pedagogical guidance centers)*

> "*It is weird to be different to the rest of the class: you want to be popular. Make gifted education as normal as possible and disprove the stigma around being the teacher's pet.*" *(representatives of secondary school students)*

Based on these reflections, we have the following recommendations:

- Changing attitudes leads to changes in behavior (Verplanken & Orbell, 2022).

- Before programs for CSL can be implemented it is important to know and assess teachers' attitudes toward giftedness and CSL (Plunckett & Kronberg, 2011). **Changing attitudes takes a lot of time** and is necessary.
- It is important that there is **clarity concerning definitions and paradigms** concerning CSL.
- Having that clear, all stakeholders should discuss what are the **goals of supporting CSL**.
- There still seems to be the idea that striving for **excellence is opposite to equity in education: this is a myth!**
- In general, **misconceptions** of teachers, parents and students themselves should be debunked, using **scientific underpinning**. **High cognitive ability should be seen as something positive**, and it should be clear that there are several talent domains.
- There is a need for a **new, integrative approach** in education in which CSL are included.
- Every school team should have an **expert on CSL**, so that the CSL perspective will be included in every discussion concerning curriculum adaptations.
- **Words are important**. Make sure that in the communication, everybody knows what you are talking about.

2.2.2 Responsibilities and Professionalization

Based on our conversations with the different stakeholders and experts concerning the education of CSL in Flanders, it can be concluded that the majority of them is very engaged in this topic. It is good to see that there is a strong research-practice partnership, particularly given the efforts of the TALENT expertise center. There should be more clarity, however, about who is responsible for what. For example, the EU interview partners raised the question of who should be responsible for the diagnostics in Flanders: should it be centralized, or carried out in schools or specialized institutions? Unclear areas of responsibility, by the way, are not only a Flemish problem, but can be seen in whole Europe. What could (and should) definitely be improved is quality control in a systematic way. There is a need for more knowledge and expertise about CSL. Within the learning networks teacher professionalization is free (funded by the government) and within the regular system. However, schools (not individual teachers) decide if they want to participate. So, although there is professionalization, for schools that are not in a learning network, professionalization takes place outside of the "regular" system, which is a challenge because of the low personal budget of teachers. Most interviewees agree that the topic should be offered in the initial teacher training. Representatives of these trainings, however, state that there is no room left for this topic in the curriculum. This leads to a lack of trust in teachers, while they should be empowered, so that a specialist is not always required (information of CLB representatives).

"teacher professionalization is the key to change the knowledge flow in the system" (representatives of CLBs and LSCs)

"Buying in the knowledge is a problem." (interview partners in Group 7)

Several private trainings are offered, for example by Spring-stof and Excentra, but more evidence-based content is needed, which is only possible if there is access to research. Although material from the Netherlands can be used, a pool of material and adjustment of the available material is desirable, as said by the representative of Spring-stof.

Generally, we can conclude that more evidence-based or informed knowledge and expertise about CSL is necessary, not only for educators, but also for medical doctors, professionals in the educational care system and parents. For now, parents and other stakeholders should be made aware of the availability of different information materials (see Annex 1).

Based on this information we come to the following recommendations:

- It is paramount that teachers, but also other people involved in the education and support of CSL, have the knowledge and skills necessary to meet the educational and support needs of CSL. They need to understand that there are many misconceptions about this topic and should be able to debunk these misconceptions, using the available literature and research. Project Talent offers a government funded training for teachers of schools that are in their network. This is an intensive trajectory of at least one year, within a professional learning network and guided by an anchor school which is scientifically supported by the Talent center; about 15% of the schools in Flanders have already participated in this professional development trajectory. Also, it is evaluated each year using (pre-post) surveys (cf. yearly reports). For teachers of other schools in Flanders, there are **in-service training possibilities** (like Hoogbloeiers) and in the Netherlands; however, these are subject to a charge.
- The education of CSL should be **integrated into the initial education** for teachers and mental health workers, where topics like misconceptions, factors influencing learning and talent development, cognitive potential and continuing education (e.g., identification and support in domains, research skills) are covered.
- To guarantee the quality of CSL education, **quality control** by inspectorates should be improved. The topic of CSL must be an explicit and standard part of the inspection, not only when the school has an official program for these students. In other words, the question: “what are you offering your CSL’s” should always be explicitly asked.
- **Homeschooling** can be a solution for some CSL. The central examination that is offered in Flanders can play a role in this. More support and control, specifically aimed at CSL’s, are necessary though, like mandatory registration and annual assessment of homeschooled students (Connolly-Sporing et al., 2024), to be sure that those students receive the education that meets their educational needs.
- Finally, there should be **more attention for disadvantaged CSL** such as students from families with a low SES or migration background, who too often are not identified, so do not get the education they need. Here too, more information about specifically hidden talents is necessary.

2.2.3 Support in School and Higher Education

In Flanders, there is a lot of material available which can help improving the education for CSL (see Annex 1). The fact that most primary schools in Flanders offer both kindergarten and elementary education can be an advantage for CSL, as it makes early identification and continuous support possible.

Also, the open educational system, the fact that any secondary school diploma gives access to higher education and that homeschooling is allowed give room for flexibility in education, which can be beneficial for CSL. The possibility of doing central examinations to obtain a recognized secondary education diploma without attending a traditional school facilitates acceleration. The fact that 20% of the students who take the central examination are younger than expected shows that this is actually used to accelerate and to make an individual planning. Although examination in the last grade of primary school is possible and common, there is no standardized examination. It depends on the school of the student, because the school has to organize this. This is unfortunate, because mostly students accelerate in primary school. Another issue that may exclude or disadvantage students is that the examination is only possible in Dutch.

> *"We have to stop with all administrative meetings (too bureaucratic). Instead, spend more time to the children. Now the learning support centers are waiting for instructions from the CLBs." (representatives of the Centers for Student Guidance and Learning Support)*

The large and well-established care and guidance system offers possibilities for more attention and better education and support for CSL, although more cooperation and alignment are advised.

In our visits and during interviews we saw examples of very good education for CSL, such as in the Anchor schools, part of Project Talent. For example, the elementary school De Kleine Icarus in Ghent provides inner differentiation, enrichment and acceleration, or a revolving-door model for CSL. Also, other schools provide very good education for CSL. For example, the middle school De Stroom in Leuven, supports 7th and 8th grade students in finding their potential and talents, offers project weeks, gives the opportunity of individual work during "flex hours" and offers training of learning skills (executive functions). Many schools, however, do not have an adapted program for CSL. Representatives of the CLB's stated that the four current strategies schools use now (remediation, compensation, differentiation, dispensation) are not sufficient for CSL and need to be complemented with enrichment, acceleration and strength-based strategies. Identification seems to be dependent on the individual school, which leads to missed CSL, and this situation is even more urgent for CSL with a less favorable background, like students from low SES families and/or students with a migration background.

Anchor schools can be an example for other schools regarding the education of CSL. However, it remains challenging to reach the schools outside of the networks. In addition, more documentation about the CSL approach of these and the anchor schools is needed.

Also in Higher Education, not all CSL get the challenges they need. There are Honors Programs, mostly in mathematics and STEM, but less in other domains. The resources aiming at CSL are limited. Students can enter university at a younger age (minimum age is 15, if they have a diploma of secondary education), but universities do not seem to be prepared for this group. The Flemish Student Association wrote a report with 18 valuable recommendations to improve university education for CSL. Summarized, they advocate for more broadening and deepening teaching materials, additional masterclasses, workshops and honors programs for outstanding students, and support for competitions and scholarships. They want professors to act as sounding boards, that there be more flexibility in exemptions and forms of assessment, and that students be given autonomy and equal opportunities for feedback. They also want extracurricular engagement and internships to be valued, micro credentials to be promoted, and attention to be paid to fear of failure and broad-based care for gifted students. Finally, they ask

for teacher training and opportunities for outstanding students to support others (see Annex 1 for the whole report).

Box 5. Project Talent

Expertise Center Talent originated from Project TALENT, a collaboration between KU Leuven, University Antwerp and University Gent, which started in 2017 and was funded by the Flemish Research Foundation (SBO). TALENT stands for 'TAiLoring EducatioN and care to Talents of youth'. Their mission is to gain better insight into the psychosocial, motivational and learning development of cognitively strong children and youth and into how the educational and home environment can promote this development. In addition, the aim is to use these scientific insights to strengthen the education and care of cognitively strong pupils.

Since 2020 Expertise Center Talent collaborates with (currently) 20 anchor schools in a project funded by the Flemish Government ('Ondersteuningsbeleid CSF leerlingen'). Supported by the Expertise Center, anchor schools organize professional learning networks in which they share evidence-informed educational practices and support the development of knowledge, skills, and attitudes of educators in other Flemish or Dutch-speaking schools in Brussels (both primary and secondary education). Participation in these learning networks is completely free of charge.

Project Talent plays a critically important role in this starting phase. In our interviews with various stakeholders, it became clear that project Talent really made a difference and already improved the situation of CSL in Flanders. Their challenge now is to reach schools outside of the network, *"we are not there yet" (Karine Verschueren)*.

Based on these reflections we recommend the following:

- Allow for a **holistic approach with a large variety** of methods in primary and secondary schools and higher education.
- Teachers need to help students to **find their potentials**.
- For disadvantaged students, **frontloading** may be necessary. Front-loading is "the process of preparing students for advanced content and creative and critical thinking prior to identification or before advanced-level courses are offered" (Briggs et al., 2008, p. 137). In other words, students are given the opportunity to undertake advanced work before they are formally identified.
- Generally, there should be an atmosphere in which **cognitive abilities are celebrated**.
- The education that is offered must **fit the level of talent development** and the measures provided should build up on each other.
- **Project Talent** (see Box 5) is a very good source to get more information about CSL and to find support for schools that want to improve their education for CSL. Scientific insights, tools and materials are disseminated through an online Talent platform (www.projecttalent.be) and a newsletter.
- There are several **publications** that can help stakeholders in the support of CSL (see Annex 1)
- **The M-circle,** which has been developed in the Catholic Educational Network as a framework for action-oriented reflection and coaching**,** is not specifically developed for CSL, but **can be used for CSL** too. However, the four mentioned strategies – remedy, differentiate, compensate, exempt – should be complemented by more strength-based

strategies for CSL, like enrichment, acceleration and other adaptations of the education in order to strengthen the learning and achievements of CSL.

- **Look beyond borders**. Experiences in other countries like LemaS in Germany, the Giftedness Profile Schools (Begaafdheidsprofielscholen) and the Knowledge Centre Giftedness (Kenniscentrum Hoogbegaafdheid) in the Netherlands can help and inspire education in Flanders. On a European level the European Council for High Ability (ECHA) can inform about means of support and on an international level the (American) National Association of Gifted Children (NAGC). Several conferences are organized by ECHA, the World Council of Gifted and Talented Children (WCGT) and NAGC. These conferences give the opportunity to learn about recent research and to meet other people who work with CSL, which can be inspiring and lead to new ways of teaching and supporting CSL.

2.2.4 Identification

In Flanders, many different methods are used for identification of CSL. These include standardized cognitive ability tests, questionnaires and checklists, behavioral observations, response-to-intervention, self-selection, nominations or interviews (e.g., about the developmental and educational history of a student). The content areas covered include cognitive abilities, needs, interests and motivation, academic achievement and the level of development of domain-specific skills, or signs of overexcitability and intensity. In the interviews, a sense of ambivalence towards cognitive ability tests became evident, with different stakeholders evaluating their experience of CSL as more informative than tests. Overall, there are no binding criteria, processes or identification tools. The anchor schools in Project Talent share an approach that emphasizes dynamic identification and the importance of using multiple informants and sources of information. The website of Project Talent informs about processes and tools of identification and gives further information on diagnostic competencies of teachers in Flanders to identify CSL.

> *"it is not the IQ test, it is the eyes test" (quote from interview with Group 5)*

> *"sometimes you feel it, sometimes you need to measure it" (quote from interview with Group 5)*

> *"it is all about experience" (Rebekka Buyse, Vrije Basisschool De Klimtore Jabbeke)*

There are multiple assessment tools available. Project Talent provides self-report scales for assessing students' interests, self-concepts, motivation, and their academic behavioral and emotional engagement. The Talent Centers and the Columbus project provide tools to support school career choices and vocational choices. Already in 2003, Prodia reviewed the available diagnostic materials for CSL and in 2019 they published the PRODIA protocol "Specifiek Diagnostisch Protocol bij Cognitief Sterk Functioneren". This protocol contains quality standards and guidelines for identification in educational contexts. But the protocol is not structurally embedded into schools or CLBs and there is no systematic knowledge about its usage available.

During the interview, stakeholders frequently referred to a needs-based approach to identification and promotion that seemed to resemble the differentiation paradigm presented in

“Every child can be a crow” (teacher at De Kleine Icarus in Ghent; school offers The Kraaiennest, a revolving-door model for CSL at the school)

“You don´t have to put a label on it to show that there are needs” (Sofie Vergauwe, Leersteuncentrum Mechelen)

the first part of this report. However, the specific needs involved remained unclear, as did the identification process and how it could be validated. Furthermore, the purpose of identification remained unclear. Well-being, social skills, executive functions, motivation and appropriate challenge were often mentioned. Performance and talent development were rarely mentioned, which might indicate that supporting achievement and excellence were underrepresented as identification goals.

Within the general care system (CLBs, LSC), entry to services is determined by specific types of need. While cognitively weaker children are considered, there is no category for CSL, which increases the risk of CSL being overlooked. Jan Coppieters from the PBD Katholiek Onderwijs presents a structured instrument for solution-focused educational counseling and intervention (the above-mentioned M circle) that can support the identification of students’ needs, including those of CSL. Frequently, problems are the starting point of identification, which might contribute to an overrepresentation of boys being identified. It also became evident that identifying children from minority backgrounds, such as non-native or working-class children, is difficult. These children are often faced with lower teacher expectations and lower grades, and the available tests underestimate their cognitive ability (De Leersnyder, 2017).

“Girls hide and make errors on purpose, also in IQ tests” (quote from interview with Group 5)

Identification in higher education and at university also presents an issue. Study guidance centers do not focus on identification. Instead, they use an inclusive, needs-based approach to identify students who are struggling.

“many gifted students are missed, but as long as there is no issue there is no need for action” (quote from interview with Group 6)

Overall, it is unclear which children and students are identified and supported, and which are overlooked. In short, identifying CSL remains challenging, and the topic needs more attention. Based on these reflections, we developed the following recommendations to improve the identification of CSL in Flanders (see also Box 4):

- **Actively search for potential in all students**, acknowledging their backgrounds. CSL need opportunities to explore and demonstrate their potential. It is important to provide stimulating and encouraging learning opportunities that allow for exploration before identifying potential ('First foster, then find!'). This is particularly important for CSL who have had fewer learning opportunities. Additionally, identification strategies based on potential, strength, and achievements should complement current approaches, ensuring identification occurs before problems arise.
- **Broaden talent domains***:* Frequently, teachers mentioned math and Dutch as talent domains; other domains such as natural or social sciences (etc.) risk being overlooked.
- Furthermore, it is crucial to **professionalize identification** by using criteria and specifying what constitutes potential in different areas. In this regard, it is important to **clarify the concept of needs-based identification and its objectives** and discuss standards for identification.

- **There are good tools available and they should be used more.** There seems to be a lack of knowledge about intelligence and cognitive ability tests and some misconceptions prevent their use. Project Talent provides lectures and e-learnings on this topic (see also its handbook "Ontwikkelen van cognitief talent"). The Prodia protocol presents a very good combination of psychological and educational assessment approaches and makes many suggestions along the layers of care. It would be important to **ensure expertise on CSL and the Prodia protocol in all CLBs, PBDs (etc.) and schools**. As the protocol was published already in 2019, we recommend to check if an update is needed.
- There are no **specific tools for identifying CSL from minority backgrounds**, and these tools need to be developed (e.g., collect local or group specific norms for available tests, use frontloading and observations, identify by RTI, develop specific interviews).
- Teachers are crucial in the identification of CSL but without any specific training and support they will not be successful in the identification of students' potential. Therefore, specific trainings and materials to **support teachers' diagnostic competencies** need to be developed and evaluated, such as the observation tool "kijkwijzer" that is developed in 2025 and 2026 within project Talent to help teachers identify cognitive abilities in their students.
- Finally, to improve the identification of CSL in Flanders, it would be important to **evaluate the identification processes** used and to evaluate who is currently identified or overlooked. There is research on teacher judgements (e.g., Lavrijsen & Verschueren, 2020) and about minority students (e.g., Agirdag & De Leersnyder, 2024) but more systematic data is needed.

2.2.5 Parents Associations, Private Centers for Diagnosis and Guidance

Interviews with parents and professionals from private centers for diagnosis and guidance revealed a great deal of pressure to act, and psychological distress in some cases. Parents reported on the lack of understanding and challenge, ambivalence and stress experienced by their children in school settings, and that their children suffer from loneliness, which is supported by research findings from project Talent (Ramos et al., 2024). Parents reported that their children were not receiving appropriate instruction or support from their teachers. Some of them had the option of working individually. However, as all children, CSL need appropriate instruction. Compensatory measures such as courses in private centers depend on parents' resources, which increases the dependence of educational opportunities on social background.

> *"there are a lot of children with special needs and the CSL stay behind" … "challenge is not real challenge but more of the same" … "you have to fight to get something for your children" (quotes from the meeting with parents)*

> *"if they can do it on their own they are not learning" (Kim Kiekens, parent)*

Overall, there is an increasing number of private centers for diagnosis and guidance that in part address gaps existing in the educational system regarding identification, courses for students,

> *"education is free but not for these children" (Kim Kiekens, parent and coordinator of SPRING-STOF)*

counseling of parents, trainings for professionals, and advocacy. However, there are no specific initiatives for CSL from minority or non-academic backgrounds, who are even less frequently identified and supported.

"parents of other gifted students say, that this is not giftedness, you are showing off" … "you are pushing, be normal" … "highly gifted children don´t seem to exist" (quotes from the meeting with parents and private centers)

The stress increases for very advanced children and their parents who sometimes experience rejection by other parents of CSL. Parents reported that very advanced students often experience distress and trauma at school, which can lead to them being placed in special education or being homeschooled if their parents have the resources to support this. There was a call for special classes or schools for very advanced students.

"you just need to separate them" (quote from the meeting with parents)

Homeschooling CSL is therefore not always a positive choice. Rather, parents presented it as the result of disillusionment with public education, concerns about classmates, and unsuccessful attempts to communicate with and advocate for CSL in schools (see also the "open letter" that was sent by Spring-stof to the Minister of Education and several other Flemish politicians on April 3 2025 entitled "Why Spring-Stof, a special project for exceptionally gifted children is necessary now").

It is important to note that these comments and reflections do not necessarily provide an objective picture on CSL and very advanced students in Flanders. Nevertheless, there is definitively a need to support the parents of these children more. There is an increasing demand for the diagnostic and guidance services of private centers, and in our interview with the inspectorates they supported the impression that among homeschooled students the number of CSL and very advanced students is increasing. We therefore make the following recommendations:

- **Parents need easily accessible, evidence-based information about CSL** and very advanced learners and they need to be better informed about available information. In our interviews, they told us that they often inform themselves using social media, which has no quality control and is very likely to contain many misconceptions. Furthermore, private centers and commercial institutions also lack quality control and do not always provide evidence-based information about CSL.
- For some very advanced learners, **education in special groups** may be necessary. This could include summer schools, pull-out programs or special classes with full-time grouping (see section 2.1.2 of this report).
- Gaps in the educational and care system for CSL are partially addressed by private centers (e.g., teacher training, counseling for parents and students, and student courses). It would be important to **close these gaps in the system** (see 'Responsibilities and Professionalization') to **make educational opportunities of CSL less dependent on their family background**, and to **ensure quality in content** conveyed.
- Moreover, there should be **spaces for open and appreciative communication about CSL in all schools** such as round tables that ensure the exchange and cooperation between parents and schools with the support of the CLBs. The teachers from the

anchor schools from project Talent confirmed that they closely cooperated with the parents and that their involvement is important to successfully support CSL.

2.2.6 Research

Most of the research concerning CSL in Flanders is done within the Project Talent, for example, on teachers' beliefs (Elke Struyf, Katelijne Barbier and Vincent Donche, UAntwerpen), teacher training (Bart Soenens and Maarten van Steenkiste, UG Gent), motivation and engagement (Maarten van Steenkiste, UGent, Jeroen Lavrijsen, Karine Verschueren, Alicia Ramos, KU Leuven), underachievement (Jeroen Lavrijsen, Karine Verschueren and Alicia Ramos, KU Leuven), the role of teachers and peers (Jeroen Lavrijsen, Karine Verchueren, Alicia Ramos, KU Leuven), and vulnerable groups (Alicia Ramos, KU Leuven). Other themes of study from outside the Project Talent network are 'teacher acceptance' (Wouter Duyck, UGent) and CSL in the specific domain of mathematics (Bert De Smedt, KU Leuven). Speaking with these researchers makes clear that there are still a lot of topics concerning CSL they think should be studied. One topic that is considered important in research is the definition that is used, which should, according to Wouter Duyck, be adapted to school level. Now, as said by Katrijn Pools of Artevelde hogeschool, the definition depends on with whom you are talking. Following Struyf et al. (2024), we suggest coming to a more inclusive definition of CSL, that broadens the concept to each top level in different domains. The researchers further agree on the fact that to change beliefs in teachers they should bring research into the classroom. What they also agree on is that this process will take a lot of time. A concern, however, is the (lack of) funding.

In general, there is a lot of Flemish research on education. Relative to this, Flemish research concerning CSL is scarce though. This was also evident at the last conference of the European Association for Research on Learning and Instruction (EARLI), a research organization with roots at the University of Leuven. EARLI has developed into one of the major European organizations in educational research, with many members from Belgium. In his opening keynote, Roland Grabner, one of the organizers of the 2025 conference, stressed the fact that educational research, including that of the EARLI community, pays too little attention to developing students' potential. Accordingly, the conference's motto was 'Realising Potentials through Education: Shaping Minds and Brains for the Future'. Thus, there is a need for more research concerning CSL and their needs in Flanders and other European countries.

Based on the different interviews, observation and document research, we have the following suggestions concerning future research:

- **Processes and criteria for identification.** How can we embrace reliable and valid assessments in specific groups? How can that also be transferred to the level of the teacher and the practitioner? How can we ensure that, in practice, assessment is used for learning?
- **Educational effectiveness research.** It is important to investigate effects of programs for CSL at the student level, including looking at higher performance and potential. In addition, school reforms should be backed up with longitudinal research, specifically focused on CSL and addressing research questions such as:
    - How are high standards set, and a knowledge-based curriculum implemented, and what do these entail?
    - How are centralized test results used and what are the consequences?
    - Is a more inclusive focus achieved and what are the consequences?

- **Long-term, longitudinal research of talent development in domains.** The researchers of Project Talent already did a lot of relevant research on talent development and the role of the social and learning environment and motivational factors. However, there are important open research questions such as:
    - What are universal mechanisms of learning, what are specific mechanisms of talent development in domains?
    - What kind of mechanisms nurture and foster excellence? How can they be applied?
    - How can we better identify and support CSL from disadvantaged backgrounds / different language backgrounds?
    - How can we better identify and support twice exceptional students?
- **Systematic monitoring system in Flanders.** For improving education, it would be important to conduct a systematic assessment of also soft indicators such as self-concept, motivation and growth mindset, and information on how well schools' students are doing. To quote Maarten Vansteenkiste: "*central testing is an outcome … but the question is, what is the engine, what is the motor, what is driving excellence? What is driving optimal well-being?*"
- Finally, we would like to advocate for an **interdisciplinary research consortium** for the topics CSL and talent development, joining the disciplines of psychology (e.g., school psychology, talent development), education (e.g., teacher training, didactics, educational effectiveness) and possibly further disciplines such as sociology or economics.

2.2.7 Transfer

Transfer of knowledge and information between research, practice, and policy is crucial for a successful and sustainable support of CSL. We talked to many important stakeholders from all three fields and encountered a lot of openness and interest in the care for talent. Within project Talent there are learning modules, and a platform for exchange between representatives from research, practice, and policy ('klankbordgroep'). Thus, with regard to transfer, there already are a lot of resources in Flanders.

- ***Research-practice transfer***: Important infrastructures are the CLBs, PBDs, Talent Centers or Professional Counseling Centers. However, it has to be ensured that the expertise about CSL is there, and this is not always the case. Positive examples are project Talent as a strategic research practice partnership, Leerpunt for translating research into education and vice versa (although, up to now, CSL are no major topic; Pedro De Bruyckere), or programs to support research competencies in schools such as Lesson Study.
- ***Policy-practice transfer*** is important to embed the topic of CSL structurally. For example, educational objectives are guiding principles both within policy and practice and it would be important to clarify them and to agree on them: For example, in our interview with partners working for the EU Marco Montanari formulated that *"typical schools have a limited understanding of why they should care about the topic (of CSL) because they have to face so many other issues".* Other aspects are: including the topic of CSL in the basic education of teachers, ensuring that the topic is explicitly included in school reforms, ensuring quality control and helping the care system to work. In the interview with Elke Struyf, author of the report on Schools for All, we learned that currently the Flemish educational school system is still segregated, with an even growing number of students being referred to special

education. Although regular schools receive support from special education and learning support centers, this expertise is not integrated within the care system of the regular schools. This does not work efficiently. Therefore, in the Schools for All, the plan is to integrate this expertise in regular education, and to install multidisciplinary teams that can foster adapted education for learners who need specific care due to a physical, mental, emotional, or behavioral disability, or a learning or behavioral disorder. Within the Schools for All, and the multidisciplinary teams in particular, it will be important to also include expertise on strong cognitive functioning, as this is currently not in the scope of special education and learning support centers.

- ***Research-policy transfer*** is central to ensure evidence-informed content by research programs and respective funding. Research-policy cooperations ensure that we work with the best available knowledge, address central topics, and establish the relevance of the topic of CSL on a broader level.

Box 6. Lessons learned from the German LemaS project regarding transfer

- Change in schools needs a lot of time!
- Transfer needs a third party that organizes and accompanies the process.
- School networks are important, and teachers need extra resources and time to meet, work on projects etc.
- It cannot be assumed that acquired competencies stay in the field; there need to be measures to ensure sustainability. It is an ongoing process.
- Schools need to be able to adapt material etc. to their situation which makes effectiveness research challenging but quality control is needed because concepts can and do "get lost" in practice.
- Policy is central to embed the topic structurally.
- Transfer is a research topic in itself!

Based on these reflections, we have the following recommendations for transfer:

- It is important to ensure that those who require expertise in CSL receive the correct knowledge. Teacher education institutions would benefit from a **common core curriculum** that standardizes the usage of terms and core content. The CLBs could play a central role in research-practice transfer and **expertise about CSL should be ensured in all centers**.
- More **resources** are needed and should be invested into transfer. Project Talent is a great start but what happens when it ends?
- To improve the situation at CSL in the long term, it is important to permanently have a **center of expertise** specifically on CSL.
- It is also decisive to plan in **third-parties for transfer**. Good schools do not just multiply by forming networks. Content, concepts and expertise in their application can and do "get lost" in practice.
- Moreover, it would be important to **reach the schools in Flanders not participating in project Talent**. *"With Leerpunt, we don't want a Matthew effect at a school level but strive to reach schools that are not active" (Leerpunt, Pedro De Bruyckere)*
- It could be helpful to establish a **transfer consortium** that includes all stakeholders, that is, students, parents, practitioners, researchers, and politicians and that meets on a regular (e.g., annual) base.

2.3 Conclusion and Outlook

Regarding the identification and support of CSL, Flanders has specific resources but also faces some challenges.

Resources and Challenges

During the Thinkers Cycle, we met many very engaged stakeholders and organizations including student organizations and higher education initiatives (SIHO). Reforms to school systems and teacher education are underway, paying attention to CSL. A lot of diagnostic and learning material is already available. Project Talent built up expertise in Flanders, established a large school network, provides resources for schools, and research findings with central importance for Flanders and beyond. The combination of kindergarten and elementary school under one roof offers great potential for early identification and continuous support of CSL in Flanders (i.e., smooth transition with exchange between teachers or students in both parts of the institution, acceleration and/or enrichment in specific domains). As stated by Brinckman and Versluys (2021), early childhood education is a qualified form of education and not just a convenient childcare service. Early childhood teachers must be properly trained to be able to offer developmental, linguistic and cognitive stimuli to young children. Full-day schooling provides many opportunities for talent development, and the educational system is very open. For example, with almost each secondary school diploma you can go to higher education (except for medicine), homeschooling is allowed, central examinations are available. There is a comprehensive system of guidance and care (e.g., CLBs, PDBs, Learning Support Centers). The annual expenditure per student on educational institutions is relatively high in an OECD comparison and higher than in Germany or the Netherlands, for example. Finally, the topic has been accepted in Thinkers program of KVAB, which acknowledges that it is of societal concern and relevance for Flanders.

However, there are also specific challenges regarding the support of CSL in Flanders. In Flemish education the relationship between students' socio-economic status and their performance (the so-called *socio-economic gradient*) is among the largest of all OECD countries. The learning outcomes of students are decreasing in Flanders as shown by international and national studies. We find the same in other European countries such as Germany and the Netherlands; however, the losses are larger in Flanders and affect the bottom and top percentiles of the student population. That is, the entire distribution went down (Dirk Van Damme). In addition, there is an increasing number of students in special education, school dropouts, students being excluded from school (sometimes at a very young age), and students in homeschooling.

Project Talent revealed a considerable number of underachievers and students with maladaptive motivational profiles within the top 10% in terms of cognitive abilities. Thus, there seems to be a mismatch between the needs and aptitudes of CSL and learning opportunities provided in school and higher education which increases for very advanced students. Their potential is not sufficiently recognized, they do not experience sufficient learning gains, and do not learn how to learn, and are not adequately challenged, which leads to an overall loss of talent. This loss is probably not easy to resolve and has many causes, among others:

- The learning standards are too low to provide adequate challenge for CSL. *"The current educational targets were designed to be minimal targets but used as reference for all learners" (Dirk Van Damme)*.
- There is an inclusive focus on equity and well-being at the expense of talent development and excellence which goes along with related misconceptions.

- The shortage of teachers reduces the resources available to support CSL.
- There is a general lack of knowledge about CSL, including among professionals, and deficits in teacher education regarding CSL and talent development.
- Schools have a high degree of autonomy and school principals play a central role. Therefore, whether or not attention is given to CSL sometimes depends on individual people.
- There are systemic inequalities and discrimination against students from minority or non-academic backgrounds, which reduces their chances of succeeding in the education system.

In Flanders, the complexity of the system of guidance and care increases the risk of diffusion of responsibilities for CSL. The school reforms pose some risks to CSL that must be considered. The introduction of centralized tests, which are intended as a measure of school quality and are not designed to grade or rank students, carries the risk that schools will start to align their teaching with the tests. A knowledge-rich curriculum that raises the bar for everyone may still not provide enough of a challenge for CSL. Finally, the reform towards the inclusive concept of schools for everyone will require significant time and effort from the education sector. Combining these reforms could result in attention being given to weaker students because *"the changes will tie up resources, and CSL may be the first to fall out of focus" (Pedro de Bruyckere, Leerpunt).* On the other hand, the transition to schools for everyone also presents opportunities to enhance education for CSL. To achieve this, expertise in CSL will need to be integrated (e.g., in the multidisciplinary teams).

CSL and talent development are relatively new areas of research, policy and practice. Accordingly, there are not only knowledge gaps, but there is also structural underrepresentation of the topic. This includes a lack of systematically embedded identification and support standards, a lack of systematic documentation of programs in Flanders, and a lack of binding content in teacher training curricula. There seems to be a lack of systematic quality control regarding CSL which was mentioned 2021 Rapport by Brinckman and Versluys, who recommended that the extent to which a school challenges CSL – and, by extension, all learners – be a fixed element in the evaluations carried out by the education inspectorate (Brinckmann & Versluijs, 2021).

Focusing on CSL and talent development can drive school development in general because it requires 'good teaching' and strengths-based strategies to realize the potential of all children. It does not create new selective privileges, as "*cognitive development is an engine for social mobility" (Wouter Duyck, Professor at Ghent University).* Developing all children's and students' potential, including CSL, is no luxury topic but at the core of education.

Recommendations in a nutshell

1. Normalize! All students have potential and large interindividual differences in potential and achievement are to be expected. High potential is a positive thing!

2. Professionalize! Include the topic in the basic education of educators, teachers (including kindergarten teachers), and school counselors as well as in their further training. Educate parents, pediatricians etc. as well. Professionalization is an ongoing process.

3. Continue research-practice partnerships, such as Project Talent, and use the available materials (see Annex 1). When relevant, translate materials into English (e.g., for international students and to make international research possible).

4. Include CSL and talent development promotion structurally in education. Make it a topic in every teacher conference, school mission statement, and quality control by inspectorates.
5. Incorporate strengths-based strategies into academic and care systems to promote the performance and talent development of **all** students. Include various strategies, as there is no one-size-fits-all approach to supporting CSL.
6. Invest in resources! Expand the knowledge base and close research gaps (e.g., documentation, identification, homeschooling, effects of interventions and programs, etc.)
7. Advocacy! Set up research and transfer consortia, develop identification and promotion standards, and pay attention to diversity in the student body, including CSL students from minority and disadvantaged backgrounds.

3. References

Agirdag, O., & De Leersnyder, J. (2024). Against the odds: Predictors of academic success and excellence in majority-minority schools. *School Effectiveness and School Improvement, 35*(3), 273–297. https://doi.org/10.1080/09243453.2024.2385938

Agirdag, O., Van Avermaet, P., & Van Houtte, M. (2013). School segregation and math achievement: A mixed-method study on the role of self-fulfilling prophecies. *Teachers College Record, 115*(3), 1–50. https://doi.org/10.1177/016146811311500305

Bernstein, B. O., Lubinski, D., & Benbow, C. P. (2021). Academic acceleration in gifted youth and fruitless concerns regarding psychological well-being: A 35-year longitudinal study. *Journal of Educational Psychology, 113*(4), 830–845. https://doi.org/10.1037/edu0000500

Breit, M., Brunner, M., Molenaar, D., & Preckel, F. (2022). Differentiation hypotheses of intelligence: A systematic review of the empirical evidence and an agenda for future research. *Psychological Bulletin, 148*(7–8), 518–554. https://doi.org/10.1037/bul0000379

Breit, M., Scherrer, V., Tucker-Drob, E. M., & Preckel, F. (2024). The stability of cognitive abilities: A meta-analytic review of longitudinal studies. *Psychological Bulletin, 150*(4), 399–439. https://doi.org/10.1037/bul0000425

Breit, M., Brunner, M., Preuß, J., Daseking, M., Pauls, F., Walter, F., & Preckel, F. (2025). The contribution of general intelligence to cognitive performance across the lifespan: A differentiation analysis of the Wechsler tests. *Psychology and Aging*. Advance online publication. https://doi.org/10.1037/pag0000875

Briggs, C. J., Reis, S. M., & Sullivan, E. E. (2008). A national view of promising programs and practices for culturally, linguistically, and ethnically diverse gifted and talented students. *Gifted Child Quarterly*, *52*(2), 131-145. https://doi.org/10.1177/0016986208316037

Brinckman, P., & Versluys, K. (2021). *Naar de kern: De leerlingen en hun leer-kracht. Rapport van de Commissie Beter Onderwijs*. Commissie Beter Onderwijs.

Bücker, S., Nuraydin, S., Simonsmeier, B. A., Schneider, M., & Luhmann, M. (2018). Subjective well-being and academic achievement: A meta-analysis. *Journal of Research in Personality, 74*, 83–94. https://doi.org/10.1016/j.jrp.2018.02.007

Cash, T. N., & Lin, T. J. (2022). Psychological well-being of intellectually and academically gifted students in self-contained and pull-out gifted programs. *Gifted Child Quarterly, 66*(3), 188–207. https://doi.org/10.1177/00169862211032987

Connolly-Sporing, A., Cody, R. A., & Plucker, J. A. (2024). Gifted students learning in homeschool settings: Research and policy recommendations. Journal of School Choice, 18(4), 638-652. https://doi.org/10.1080/15582159.2024.2422246

Dai, D. Y., & Chen, F. (2013). Three paradigms of gifted education: In search of conceptual clarity in research and practice. *Gifted Child Quarterly, 57*(3), 151–168. https://doi.org/10.1177/0016986213490020

De Leersnyder, J. (2017, November 21). Gebruik van IQ-testen om beleid te evalueren is een stap achteruit in de strijd om gelijke kansen. *Knack*. https://www.knack.be/opinie/gastbloggers/gebruik-van-iq-testen-om-beleid-te-evalueren-is-een-stap-achteruit-in-de-strijd-om-gelijke-kansen/

Feuchter, M. D., & Preckel, F. (2022). Reducing boredom in gifted education—Evaluating the effects of full-time ability grouping. *Journal of Educational Psychology, 114*(6), 1477–1493. https://doi.org/10.1037/edu0000694

Fong, C. F., Patall, E. A., Snyder, K. E., Hoff, M. A., Jones, S. J., & Zuniga-Ortega, R. E. (2023). Academic underachievement and its motivational and self-regulated learning correlates: A meta-analytic review of 80 years of research. *Educational Research Review, 41*, 100566. https://doi.org/10.1016/j.edurev.2023.100566

Freund, P. A., & Kasten, N. (2012). How smart do you think you are? A meta-analysis on the validity of self-estimates of cognitive ability. *Psychological Bulletin, 138*(2), 296–321. https://doi.org/10.1037/a0026556

Furnham, A., & Valgeirsson, H. (2007). Parents' estimations of their own intelligence and that of their children: A comparison between English and Icelandic parents. *Scandinavian Journal of Psychology, 48*(4), 289–298. https://doi.org/10.1111/j.1467-9450.2007.00587.x

Gnas, J., Mack, E., & Preckel, F. (2022). When classmates influence teacher judgment accuracy of students' cognitive ability: Studying frame-of-reference effects in primary school. *Contemporary Educational Psychology, 69*, 102070. https://doi.org/10.1016/j.cedpsych.2022.102070

Gnas, J., Mack, E., Matthes, J., Breit, M., & Preckel, F. (2022). Sozio-emotionales Erleben von Schule bei Grundschülerinnen und -schülern: Zusammenhänge mit intellektueller Begabung und Schulleistung. *Zeitschrift für Erziehungswissenschaft, 25*, 1095–1123. https://doi.org/10.1007/s11618-022-01115-x

Gnas, J., Urban, J., Feuchter, M. D., & Preckel, F. (2024). Socio-emotional experiences of primary school students: Relations to teachers' underestimation, overestimation, or accurate judgment of their cognitive ability. *Social Psychology of Education*. Advance online publication. https://doi.org/10.1007/s11218-024-09915-1

Gniewosz, B., & Watt, H. M. G. (2017). Adolescent-perceived parent and teacher overestimation of mathematics ability: Developmental implications for students' mathematics task values. *Developmental Psychology, 53*(7), 1371–1383. https://doi.org/10.1037/dev0000332

Hanses, P., & Rost, D. H. (1998). Das „Drama" der hochbegabten Underachiever—„Gewöhnliche" oder „außergewöhnliche" Underachiever? *Zeitschrift für Pädagogische Psychologie, 12*, 53–71.

Hoge, R. D., & Coladarci, T. (1989). Teacher-based judgments of academic achievement: A review of literature. *Review of Educational Research, 59*(3), 297–313. https://doi.org/10.3102/00346543059003297

Holling, H., Vock, M. & Preckel, F. (2001). Schulische Begabtenförderung in den Ländern der Bundesrepublik Deutschland. In Bund-Länder-Kommission für Bildungsplanung und Forschungsförderung (Hrsg.), *Begabtenförderung – ein Beitrag zur Förderung von Chancengleichheit in Schulen – Orientierungsrahmen* (S. 27-270). Materialien zur Bildungsplanung und Forschungsförderung, Heft 91. BLK. Bonn.

Holling, H., Preckel, F., Vock, M. & Schulze Willbrenning, B. (2004). *Schulische Begabtenförderung in den Ländern. Maßnahmen und Tendenzen. Materialien zur Bildungsplanung und zur Forschungsförderung.* Heft 121. Bonn: BLK. (http://www.blk-bonn.de/papers/heft121.pdf)

Hoogeveen, L. (2022). Academic acceleration as an educational adaptation of the curriculum. In M. A. Peters (Ed.), *Encyclopedia of teacher education* (pp. 1–6). Springer Nature. https://doi.org/10.1007/978-981-16-8679-525

Hoogeveen, A. J. M. (2008). Social emotional consequences of accelerating gifted students. Doctoral dissertation Radboud University.

Hoogeveen, L. (in press). Gifted education in Europe: Past, present, and future. In L. Hoogeveen, C. O'Reilly, E. Kroesbergen, & K. Verschueren (Eds.), *European handbook of gifted education and talent development*. Routledge.

Kim, M. (2016). A meta-analysis of the effects of enrichment programs on gifted students. *Gifted Child Quarterly, 60*(2), 102-116. https://doi.org/10.1177/0016986216630607

Lavrijsen, J., & Verschueren, K. (2020). Student characteristics affecting the recognition of high cognitive ability by teachers and peers. *Learning and Individual Differences, 78*, Article 101820. https://doi.org/10.1016/j.lindif.2019.101820

Lavrijsen, J., & Verschueren, K. (2023). High cognitive ability and mental health: Findings from a large community sample of adolescents. *Journal of Intelligence, 11*(2), Article 38. https://doi.org/10.3390/jintelligence11020038

Lavrijsen, J., Sypré, S., Soenens, B., Vansteenkiste, M., Camerman, E., Ramos, A., & Verschueren, K. (2024). Fostering excellence: Nurturing motivation and performance among high- and average-ability students through need-supportive teaching. *Journal of School Psychology, 105*, 101322. https://doi.org/10.1016/j.jsp.2024.101322

Lo, C. O., & Porath, M. (2017). Paradigm shifts in gifted education: An examination vis-à-vis its historical situatedness and pedagogical sensibilities. *Gifted child quarterly, 61*(4), 343-360. https://doi.org/10.1177/0016986217722840

Machts, N., Kaiser, J., Schmidt, F. T., & Möller, J. (2016). Accuracy of teachers' judgments of students' cognitive abilities: A meta-analysis. *Educational Research Review, 19*, 85–103. https://doi.org/10.1016/j.edurev.2016.06.003

Mack, E., Scherrer, V., & Preckel, F. (2025). How smart is my child? The judgment accuracy of parents regarding their children's cognitive ability. *Child Development, 96*, 122–140. https://doi.org/10.1111/cdev.14156

Meyer, M. S., & Plucker, J. A. (2022). Special education should include advanced learning needs. In J. M. Kauffman (Ed.), *Revitalizing special education* (pp. 169–187). Emerald Publishing. https://doi.org/10.1108/978-1-80117-494-7-20221009

Neihart, M., Pfeiffer, S. I., & Cross, T. L. (Eds.). (2016). *The social and emotional development of gifted children: What do we know?* (2nd ed.). Prufrock Press.

Neihart, M., Reis, S. M., Robinson, N. M., & Moon, S. M. (Eds.). (2002). *The social and emotional development of gifted children: What do we know?* Prufrock Press.

Nicholas, M., Skourdoumbis, A., & Bradbury, O. (2024). Meeting the needs and potentials of high-ability, high-performing, and gifted students via differentiation. *Gifted Child Quarterly, 68*(2), 154–172. https://doi.org/10.1177/00169862231222225

Olszewski-Kubilius, P. (2023, August). *Talent development as a framework for gifted services* [Invited online presentation]. World Council for Gifted and Talented Children Conference.

Olszewski-Kubilius, P., & Corwith, S. (2018). Poverty, academic achievement, and giftedness: A literature review. *Gifted Child Quarterly, 62*(1), 37–55. https://doi.org/10.1177/0016986217738013

Olszewski-Kubilius, P., Subotnik, R. F., & Worrell, F. C. (2015). Conceptualizations of giftedness and the development of talent: Implications for counselors. *Journal of Counseling & Development, 93*, 143–152. https://doi.org/10.1002/j.1556-6676.2015.00190.x

Plucker, J. A., & Dilley, A. (2016). Ability grouping and the socioemotional development of gifted students. In M. Neihart, S. I. Pfeiffer, & T. L. Cross (Eds.), *The social and emotional development of gifted children: What do we know?* (2nd ed., pp. 231–241). Prufrock Press Inc..

Plunkett, M., & Kronborg, L. (2011). Learning to be a teacher of the gifted: The importance of examining opinions and challenging misconceptions. *Gifted and Talented International, 26*(1–2), 31–46. https://doi.org/10.1080/15332276.2011.11673587

Preckel, F. (2010). Intelligenztests in der Hochbegabungsdiagnostik. In F. Preckel, W. Schneider, & H. Holling (Hrsg.), *Diagnostik von Hochbegabung* (S. 19–43). Hogrefe.

Preckel, F., Golle, J., Grabner, R., Jarvin, L., Kozbelt, A., Müllensiefen, D., Olszewski-Kubilius, P., Schneider, W., Subotnik, R., Vock, M., & Worrell, F. C. (2020). Talent development in achievement domains: A psychological framework for within- and cross-domain research. *Perspectives on Psychological Science, 15*(3), 691–722. https://doi.org/10.1177/1745691619895030

Preckel, F., Rach, H., & Scherrer, V. (2016). Self-concept changes in multiple self-concept domains of gifted students participating in a summer residential school. *Gifted and Talented International, 31*(2), 88–101. https://doi.org/10.1080/15332276.2017.1304781

Preckel, F., Vock, M., & Olszewski-Kubilius, P. (2024). *Giftedness and talent: What educators and psychologists need to know*. Hogrefe.

Pressey, S. L. (1949). *Educational acceleration: Appraisals and basic problems* (Bureau of Educational Research Monograph No. 31). The Ohio State University.

Ramos, A., De Fraine, B., & Verschueren, K. (2019). Schoolloopbanen van cognitief begaafde leerlingen in Vlaanderen. *Tijdschrift voor Onderwijsrecht en Onderwijsbeleid, 1*(2), 23–33.

Ramos, A., De Fraine, B., & Verschueren, K. (2021). Learning goal orientation in high-ability and average-ability students: Developmental trajectories, contextual predictors, and long-term educational outcomes. *Journal of Educational Psychology, 113*(2), 370–389. https://doi.org/10.1037/edu0000476

Ramos, A., Lavrijsen, J., Soenens, B., Vansteenkiste, M., Sypré, S., & Verschueren, K. (2021). Profiles of maladaptive school motivation among high-ability adolescents: A person-centered exploration of the motivational pathways to underachievement model. *Journal of Adolescence, 88*, 146–161. https://doi.org/10.1016/j.adolescence.2021.03.001

Ramos, A., Steenberghs, N., Lavrijsen, J., Goossens, L., & Verschueren, K. (2024). Differences in loneliness experiences among high-ability students: Individual and social context predictors. *Exceptional Children, 91*(1), 93–113. https://doi.org/10.1177/00144029241271927

Ramos, A., Vansteenkiste, M., Lavrijsen, J., Soenens, B., & Verschueren, K. (2025). Motivational profiles among high-ability students from a self-determination perspective: Stability, antecedents, and comparisons with average-ability students. *Learning and Individual Differences, 118*, 102620.

Ramos, A., Venneman, S., Donche, V., & Verschueren, K. (2022). Factors facilitating and hindering the transition to higher education for high-ability students. *Journal of College Student Development, 63*(3), 315–332. https://doi.org/10.1353/csd.2022.0026

Renzulli, J. S., Reis, S. M., & Brigandi, C. B. (2021). Enrichment: Theory, research, and practice. In J. A. Plucker & C. M. Callahan (Eds.), *Critical issues and practices in gifted education* (3rd ed., pp. 185–199). Routledge.

Saß, S., Köller, O., & Zimmermann, F. (2025). Smart but maladapted? Differences in the psychological functioning of intellectually gifted students compared with average-ability students. *Gifted Child Quarterly*, *69*(3), 219-236. https://doi.org/10.1177/00169862241310871

Schrader, F.-W., & Praetorius, A.-K. (2018). Diagnostische Kompetenz von Eltern und Lehrern [Diagnostic competence of parents and teachers]. In D. H. Rost, J. R. Sparfeldt, & S. Buch (Hrsg.), *Handwörterbuch Pädagogische Psychologie* (4. Auflage, S. 92–98). Beltz.

Sękowski, A. E., Cichy-Jasiocha, B., & Płudowska, M. (2019). Gifted education in Europe. In S. I. Pfeiffer, M. Neihart, & T. L. Cross (Eds.), *The SAGE handbook of gifted and talented education* (pp. 507–521). SAGE.

Southern, W.T., & Jones, E.D. (2015). Types of Acceleration: Dimensions and Issues. In: S. G. Assouline, N. Colangelo, J. VanTassel-Baska, & A. Lupkowski-Shoplik (Eds.), A Nation Empowered. Evidence Trumps the Excuses Holding Back America's Brightest Students VOLUME 2. Belin-Blank Center, College of Education, University of Iowa

Steenbergen-Hu, S., Makel, M. C., & Olszewski-Kubilius, P. (2016). What one hundred years of research says about the effects of ability grouping and acceleration on K–12 students' academic achievement: Findings of two second-order meta-analyses. *Review of Educational Research, 86*(4), 849–899. https://doi.org/10.3102/0034654316675417

Struyf, E. et al. (2024). Evolutie naar scholen voor iedereen. Advies van de onafhankelijke Commissie Inclusief Onderwijs. Retreived from https://data-onderwijs.vlaanderen.be/documenten/bestanden/advies-commissie-inclusief-onderwijs.pdf (May 2025)

Subotnik, R. F., Olszewski-Kubilius, P., & Worrell, F. C. (2011). Rethinking giftedness and gifted education: A proposed direction forward based on psychological science. *Psychological Science in the Public Interest, 12*(1), 3–54. https://doi.org/10.1177/1529100611418056

Südkamp, A., Kaiser, J., & Möller, J. (2012). Accuracy of teachers' judgments of students' academic achievement: A meta-analysis. *Journal of Educational Psychology, 104*(3), 743–762. https://doi.org/10.1037/a0027627

Thomas, M. S. (2018). A neurocomputational model of developmental trajectories of gifted children under a polygenic model: When are gifted children held back by poor environments?. Intelligence, 69, 200-212. 10.1016/j.intell.2018.06.008

Urhahne, D. (2015). Teacher behavior as a mediator of the relationship between teacher judgment and students' motivation and emotion. *Teaching and Teacher Education, 45*, 73–82. https://doi.org/10.1016/j.tate.2014.09.006

Urhahne, D., Chao, S.-H., Florineth, M. L., Luttenberger, S., & Paechter, M. (2011). Academic self-concept, learning motivation, and test anxiety of the underestimated student. *British Journal of Educational Psychology, 81*(1), 161–177. https://doi.org/10.1348/000709910X504500

Urhahne, D., Zhou, J., Stobbe, M., Chao, S.-H., Zhu, M., & Shi, J. (2010). Motivationale und affektive Merkmale unterschätzter Schüler [Motivational and affective characteristics of underestimated students]. *Zeitschrift für Pädagogische Psychologie, 24*(3–4), 275–288. https://doi.org/10.1024/1010-0652/a000021

Valiente, C., Spinrad, T. L., Ray, B. D., Eisenberg, N., & Ruof, A. (2022). Homeschooling: What do we know and what do we need to learn?. *Child Development Perspectives, 16*(1), 48-53

Van Hyfte, L. (n.d.) LEV/. Leidraad voor Versnellen. Een hulpmiddel voor het ontwikkelen van een versnellingsbeleid in het secundair Onderwijs. Project Voorbeeldscholen voor cognitief sterk functionerende leerlingen

VanTassel-Baska, J. (2009). United States policy development in gifted education: A patchwork quilt. In L. V. Shavinina (Ed.), *International handbook on giftedness* (pp. 1295–1312). Springer.

Vaughn, V. L., Feldhusen, J. F., & Asher, J. W. (1991). Metaanalyses and review of research on pull-out programs in gifted education. *Gifted Child Quarterly, 35*, 92-98. doi:10.1177/001698629103500208

Verplanken, B., & Orbell, S. (2022). Attitudes, habits, and behavior change. *Annual Review of Psychology, 73*, 327–352. https://doi.org/10.1146/annurev-psych-020821-011744

Vlaamse Vereniging van Studenten. (2023). *Standpunt: Excelleren in het hoger onderwijs*. VVS.

Weyringer, S. (2013). Gifted education in Austria. *Journal for the Education of the Gifted, 36*(3), 365-383.

Wollschläger, R. (2016). *Diagnostic competencies of teachers: Accuracy of judgment, sources of bias, and consequences of (mis-)judgment* (Doctoral dissertation). University of Trier.

Zeidner, M., & Schleyer, E. J. (1999). Evaluating the effects of full-time vs. part-time educational programs for the gifted: Affective outcomes and policy considerations. *Evaluation and Program Planning, 22*(4), 413–427.

Zell, E., & Krizan, Z. (2014). Do people have insight into their abilities? A metasynthesis. *Perspectives on Psychological Science, 9*(2), 111–125. https://doi.org/10.1177/1745691613518075

Zhou, J., & Urhahne, D. (2013). Teacher judgment, student motivation, and the mediating effect of attributions. *European Journal of Psychology of Education, 28*(2), 275–295. https://doi.org/10.1007/s10212-012-0114-9

4. Annexes

Annexe 1 - Available materials

- Specifiek Diagnostisch Protocol bij Cognitief Sterk Functioneren (Prodia)
- Peuters met een ontwikkelingsvoorsprong (Kenniscentrum Hoogbegaafdheid, Nederland)
- 'Omgaan met hoogbegaafde leerlingen? Daar weten we veel te weinig van' - Ann Peuteman (Knack)
- Concretisering kwaliteitsverwachtingen gericht op cognitief sterk functionerende leerlingen gebaseerd op de referentiekader voor onderwijskwaliteit
- Leidraad Cognitief sterk functioneren. Richtlijnen voor een inclusief beleid in (de transitie naar) het hoger onderwijs
- Standpunt excelleren in het hoger onderwijs. Vlaamse Vereniging van Studenten (VVS)

Annexe 2 - Coordinating committee

Joos Vandewalle, Royal Flemish Academy of Belgium for Sciences and Arts, Class of Technical Sciences, coordinator

Lieven Verschaffel, Royal Flemish Academy of Belgium for Sciences and Arts, Class of Humanities, coordinator

Karine Verschueren, External expert, KU Leuven, coordinator

Inez Dua, Senior staff Officer, Royal Flemish Academy of Belgium for Sciences and Arts, administrative coordinator

Steering committee

Patrick Onghena, Royal Flemish Academy of Belgium for Sciences and Arts, Class of Humanities

Mieke Van Houtte, Royal Flemish Academy of Belgium for Sciences and Arts, Class of Humanities

Sabine Van Huffel, Royal Flemish Academy of Belgium for Sciences and Arts, Class of Natural Sciences

Niel Hens, Royal Flemish Academy of Belgium for Sciences and Arts, Class of Natural Sciences

Joris De Schutter, Royal Flemish Academy of Belgium for Sciences and Arts, Class of Technical Sciences

Giovanni Samaey, alumnus Young Academy, KU Leuven

Bert De Smedt, alumnus Young Academy, KU Leuven

Orhan Agirdag, alumnus Young Academy, KU Leuven

Kim De Veirman, Young Academy, VU Brussels

Tinne De Laet, KU Leuven

Vincent Donche, UAntwerpen

Tessa Kieboom, UHasselt

Ina Buvens, Flemish Departement of Education

Inge Loomans, Flemish Departement of Education

Sabine Sypré, High ability expert and practitioner

Dirk Van Damme, international educational expert

Annexe 3 - First visit

KVAB Thinkers cycle 2025

REFLECTIONS ON THE PRACTICE AND POLICY OF EDUCATIONAL HANDLING OF COGNITIVELY HIGH-FUNCTIONING PUPILS IN FLANDERS

Program for the Thinkers' first visit (January 20-23, 2025)[1]

Monday January 20 – in situ and Brussels

Location: De Kleine Icarus, Karel Lodewijk Ledeganckstraat 4, 9000 Gent

9.30-11.00 School visit with Director and teachers

11.00-13.00 GROUP 1: Meeting with representatives of primary & secondary anchor schools from the 'Ondersteuningsbeleid Cognitief Sterk Functioneren' and of the Talent Expertise Center

13.00-15.00 Sandwich lunch @De Kleine Icarus + Return to Brussels

15.00-17.00 GROUP 2: Meeting with centers for student guidance (Centra voor leerlingenbegeleiding, CLB) and learning support (Leersteuncentra)

Tuesday January 21 – in situ and Brussels

Location: De Stroom, J.P. Minckelersstraat 192, 3000 Leuven

9.30-11.00 School visit with Director and teachers

11.00-13.00 GROUP 3: Meeting with representatives of primary & secondary non-anchor schools

13.00-15.00 Sandwich lunch @De Stroom + Return to Brussels

15.00-17.00 GROUP 4: Meeting with pedagogical guidance centers (Pedagogische beleidingsdiensten (PBD)) and educational centers (Onderwijscentra)

Wednesday January 22 – KVAB, Brussels

Location: Palace of the Academies, Hertogsstraat 1, 1000 Brussels

10.00-12.00 GROUP 5: Meeting with professional organisations and centers providing counseling, support and/or training

12.00-13.00 Sandwich lunch @KVAB with participants of GROUP 5 and GROUP 6

[1] List of participants: see below.

13.00-15.00 GROUP 6: Meeting with representatives from institutes for higher education (universities, universities of applied sciences, colleges)

15.00-17.00 GROUP 7: Meeting with representatives from professional and academic teacher training institutes and programs

Thursday January 23 – KVAB, Brussels

Location: Palace of the Academies, Hertogsstraat 1, 1000 Brussels

10.00-12.00 GROUP 8: Meeting with associations of (parents of) of (exceptionally) gifted learners, individual parents of (exceptionally) gifted learners, and (Young) Academy members

12.00-13.00 Sandwich lunch @KVAB with participants of group 8 and Steering Committee

13.00-17.00 STEERING COMMITTEE:

- Report by the Thinkers of their first visit – First impressions and reflections
- Short presentations by members of the coordinating team or steering committee
    - Presentation about the TALENT project as a whole and its relation to the anchor school project of the Ministry of Education, by Karine Verschueren
    - Presentation by Giovanni Samaey about his experiences with teaching mathematics to groups of cognitively high functioning upper elementary school students
    - Reflections by Dirk Van Damme on the strive for expertise and the care for cognitively high functioning learners in Flemish education from a historical and comparative perspective
- The Thinkers' second visit (March 31 – April 3, 2025): Presentation and discussion of the tentative plans
- Closing Symposium (June 11, 2025) and Final Report of the Thinkers' program: Presentation and discussion of the tentative plans

List of participants Thinkers' first visit (January 20-23, 2025)

De Kleine Icarus

- Julie Snauwaert, De Kleine Icarus
- Dorien Van Den Steen, CSF coordinator, De Kleine Icarus
- Sharon Blanchaert, teacher external enrichment class, De Kleine Icarus
- Karine Verschueren
- Lieven Verschaffel
- Inez Dua
- Inge Loomans, Departement Onderwijs, member SC
- Sabine Sypré, Hoogbloeier, member SC
- Lianne Hoogeveen, Thinker
- Franzis Preckel, Thinker

GROUP 1: Meeting with representatives of primary & secondary anchor schools from the 'Ondersteuningsbeleid Cognitief Sterk Functioneren' and of the Talent Expertise Center

- Sofie Bergé, coordinator Talent Expertise Center
- Liv van Hyfte, GO! Atheneum Ekeren
- Ilse Verhoeven, Middenschool Heilig Hart Bree
- Ignace Ryheul, Sint-Jozef Humaniora Brugge
- Himsha Vanhaecke, VBS De Krekel, Sint-Amandsberg
- Delphine Dobbelaere, GO! Basisschool Manitoba Sint-Andries
- Inge Loomans, Departement Onderwijs
- Julie Snauwaert, Director, De Kleine Icarus
- Dorien Van Den Steen, CSF coordinator, De Kleine Icarus
- Sharon Blanchaert, teacher external enrichment class, De Kleine Icarus
- Karine Verschueren
- Lieven Verschaffel
- Inez Dua
- Sabine Van Huffel, member SC
- Lianne Hoogeveen, Thinker
- Franzis Preckel, Thinker

GROUP 2: Meeting with centers for student guidance (Centra voor leerlingenbegeleiding, CLB) and learning support (Leersteuncentra)

- Ann Van Rompaey, Prodia Vrij CLB
- Sarah Schaubroeck, Prodia GO!
- Sofie Vergauwe, Leersteuncentrum Mechelen
- Sabine Sypré, Hoogbloeier, member SC
- Karine Verschueren
- Lieven Verschaffel
- Inez Dua
- Sabine Van Huffel, member SC
- Lianne Hoogeveen, Thinker
- Franzis Preckel, Thinker

De Stroom

- Ine Vandezande, Director, De Stroom
- Karine Verschueren
- Lieven Verschaffel
- Inez Dua
- Sabine Sypré, Hoogbloeier, member SC
- Lianne Hoogeveen, Thinker
- Franzis Preckel, Thinker

GROUP 3: Meeting with representatives of primary & secondary non-anchor schools

- Els Menu, VSC Hoeilaart
- Sylvie Naeyaert, SG Archipel
- Rebekka Buyse, Vrije Basisschool De Klimtoren Jabbeke
- Sandra Nauwelaerts, De Groeidenker
- Romy Loosveldt, De Groeidenker
- Ine Vandezande, Director, De Stroom
- Sabine Sypré, Hoogbloeier, member SC
- Karine Verschueren
- Lieven Verschaffel
- Inez Dua
- Sabine Van Huffel, member SC
- Lianne Hoogeveen, Thinker
- Franzis Preckel, Thinker

GROUP 4: Meeting with pedagogical guidance centers (Pedagogische beleidingsdiensten (PBD)) and educational centers (Onderwijscentra)

- Thijs Mackelberg, Onderwijscentrum Gent
- Jan Coppieters, PBD Katholiek Onderwijs
- Isabelle Marginet, PBD OVSG
- Karine Verschueren
- Lieven Verschaffel
- Inez Dua
- Sabine Van Huffel, member SC
- Lianne Hoogeveen, Thinker
- Franzis Preckel, Thinker

GROUP 5: Meeting with professional organisations and centers providing counseling, support and/or training

- Danielle Verheye, GEMZ
- Veerle Cool, Hoogbloeier
- Kim Kiekens, SPRING-STOF
- Tania Gevaert, Samen Slimmer Groeien (Steunpunt Onderpresteren)
- Els De Wit, Talentvol
- Katrien Van Hees, L-aTent
- Elke Coorens, Intellectum
- Tinneke Boonen, Mauna Loa
- Joris De Schutter, member SC
- Karine Verschueren
- Lieven Verschaffel

- Joos Vandewalle
- Sabine Van Huffel, member SC
- Lianne Hoogeveen, Thinker
- Franzis Preckel, Thinker

GROUP 6: Meeting with representatives from institutes for higher education (universities, universities of applied sciences, colleges)

- Isabelle Lanszweert, Hoofd studentencentrum, UGent
- Koenraad Keignaert, Hoofd departement Studentenvoorzieningen, UAntwerpen
- Liesbeth Van Heden, STUVO KU Leuven
- Bart Dejonghe, STUVO KU Leuven
- Irena Tallon, STUVO VUB
- Valerie Van Hees, Steunpunt Inclusief Onderwijs SIHO
- Tinne De Laet, Hoofd Studentenbegeleiding ir-wetenschappen, KU Leuven
- Yolande Berbers, Honors programma ir-wetenschappen, KU Leuven
- Karine Verschueren
- Lieven Verschaffel
- Joos Vandewalle
- Lianne Hoogeveen, Thinker
- Franzis Preckel, Thinker

GROUP 7: Meeting with representatives from professional and academic teacher training institutes and programs

- Fleur Janssens, PXL
- Sofie Van Eynde, UCLL
- Katrijn Pools, Arteveldehogeschool
- Katrijn De Waele, Arteveldehogeschool
- Lisa Caenen, Vives Hogeschool
- Delphine Fockedey, Vives Hogeschool
- Griet Galle, School of education Leuven
- Tijs Rotsaert, School of education Gent
- Karine Verschueren
- Lieven Verschaffel
- Joos Vandewalle
- Lianne Hoogeveen, Thinker
- Franzis Preckel, Thinker

GROUP 8: Meeting with associations of (parents of) of (exceptionally) gifted learners, individual parents of (exceptionally) gifted learners, and (Young) Academy members

- Kathleen Hellinckx, UHB Vlaanderen
- Kim De Veirman, Young Academy-member
- Giovanni Samaey, KVAB-member
- Niel Hens, KVAB-member
- Christine Engelborghs, parent
- Jan Toye, parent
- Dirk Hoegaerts, parent

- Kim Kiekens, parent
- Karine Verschueren
- Lieven Verschaffel
- Joos Vandewalle
- Inez Dua
- Sabine Van Huffel, member SC
- Lianne Hoogeveen, Thinker
- Franzis Preckel, Thinker

STEERING COMMITTEE

- Giovanni Samaey
- Dirk Van Damme
- Sabine Van Huffel
- Niel Hens
- Sabine Sypré
- Kim De Veirman
- Bert De Smedt
- Joris De Schutter
- Vincent Donche
- Karine Verschueren
- Lieven Verschaffel
- Joos Vandewalle
- Inez Dua
- Lianne Hoogeveen, Thinker
- Franzis Preckel, Thinker

Annexe 4 - Second visit

KVAB Thinkers cycle 2025

REFLECTIONS ON THE PRACTICE AND POLICY OF EDUCATIONAL HANDLING OF COGNITIVELY HIGH-FUNCTIONING PUPILS IN FLANDERS

Program for the Thinkers' second visit (March 31-April 3, 2025)*

MONDAY March 31

Location: Morning and afternoon via Teams

➔ Due to national strike of public transport on Monday, all meetings take place ONLINE

10:00-11:00 Central examination commission (secondary education)
- Evi Verduyckt, Division chair
- An Van de Ven

11:00-12:00 Talent Centers
- Wouter Duyck, UGent

12:00-13:00 Exentra
- Tessa Kieboom

LUNCH

14:00-15:00 Coaching and training of gifted children with low SES, OKAN schools
- Orhan Agirdag, KU Leuven
- Jozefien De Leersnyder, KU Leuven

15:00-16:00 Flemish Inspectorate
- Bart Lamote
- Hilde De Rijbel

TUESDAY April 1

Location: Morning and afternoon @KVAB live or via Teams

10:00-11:00 Bekina
- Liliane Verlinden - ONLINE

11:00-12:00 European Commission
- Marco Montanari, Policy Officer for Evidence-based Policy, Directorate-general for Education, Youth, Sport and Culture - ONLINE
- Ulrike Pisiotis - ONLINE
- Adrienn Nyircsak - ONLINE

LUNCH

13:30-14:30 Research policy
Department Education and Training
- Ina Buvens - ONLINE

- Inge Loomans - ONLINE

Ministery of Education
- Kathleen Krekels, advisor - ONLINE

14:30-16:00 Student organisations

VVS (Vlaamse Vereniging voor Studenten)
- Bob Meerts
- Ruben Van der Elst

VSK (Vlaamse Scholierenkoepel)
- Lander Verbist, 3rd year, finaliteit doorstroom
- Catalina Stoops, director, 5th year

16:00-17:00 Expert inclusion / special education
- Elke Struyf - **ONLINE**

WEDNESDAY April 2

Location: Morning and afternoon @KVAB live or via Teams

10:00-11:45 Researchers and research policy makers
- Vincent Donche, UAntwerpen – ONLINE
- Maarten Vansteenkiste, UGent – ONLINE
- Alicia Ramos, KU Leuven
- Wouter Duyck, UGent - ONLINE
- Katrijn Pools, Arteveldehogeschool
- Marlies Tierens, Thomas More – ONLINE

12:00-13:00 Katholiek Onderwijs Vlaanderen
- Bruno Vanobbergen, Director-General

LUNCH

16:00-17:00 GO! (Gemeenschapsonderwijs)
- Saskia Lieveyns, advisor-coordinator PBD – ONLINE
- Els Gallin, GO! - ONLINE

THURSDAY April 3

Location: Morning and afternoon @KVAB live or via Teams

10:00-11:00 Programs for Policy and practice oriented research

Department of Education
- Katrijn Ballet, coordinator

Leerpunt
- Pedro de Bruyckere, director

11:00-12:30 Coordinating committee

LUNCH

14:00-17:00 Steering Committee

Agenda:

1) Report of first impressions and conclusions of second visit week by the thinkers
2) Planning of final symposium
3) Planning of final report: first ideas and exchange
4) Overview of the available documentation material + exploration of possible missing materials …

- Mieke Van Houtte - ONLINE
- Kim De Veirman - ONLINE
- Sabine Van Huffel
- Niel Hens - ONLINE
- Patrick Onghena - ONLINE
- Sabine Sypré
- Ina Buvens - ONLINE
- Vincent Donche

* Lianne Hoogeveen, Franzis Preckel, Lieven Verschaffel, Karine Verschueren, Joos Vandewalle en Inez Dua participate in all meetings.

Annexe 5 - Final Symposium

Final symposium Thinkers cycle

Reflections on the Practice and Policy of Educational Approaches Toward Cognitively High-Functioning Learners in Flanders

June 11, 2025, Palace of the Academies

PROGRAM

10.00: **Lieven Verschaffel**: Introduction to the Thinker's cycle and the Closing symposium (EN)

10.15: **Lianne Hoogeveen and Franzis Preckel**: Findings and reflections from an international and scientific perspective (EN)

11.15: Break

11.25: Panel discussion (NL)

- Moderator: **Sanne Baeck** (journalist VRT)
- Participants:
  Karine Verschueren (professor of school psychology KU Leuven)
  Dirk Van Damme (international education expert)
  Pedro De Bruyckere (general director of Expertise Center Leerpunt)
  Hilde Van Hauwe (general director of HR policy KBC Group)
  Ignace Ryheul (mentor CSF pupils St-Jozef humaniora Brugge)

12.30: Lunch break

13.30: Educational approaches toward cognitively high-functioning learners in practice: four video testimonials (Interviews in NL with EN subtitles)

13.45: **Lianne Hoogeveen** and **Franzis Preckel**: Recommendations of the Thinkers (EN)

14.30: Break

14.40: Parallel sessions (NL)

- Early Childhood and Primary Education
- Secondary education
- Higher education and Lifelong Learning

15.25: Brief reports from the parallel sessions, reaction from the Thinkers, and general discussion

16.10**: Joos Vandewalle**: Final word (EN)

16.15: Reception

[i] Percentages were estimated in a data simulation using the statistical software R and the package MASS by Brian Ripley, Bill Venables, Douglas M. Bates, Kurt Hornik, Albrecht Gebhardt and David Firth (2025; see: https://cran.r-project.org/web/packages/MASS/index.html). The syntax for the simulation is as follows:

```
#install.packages("MASS")
library(MASS)
# Parameter
p <- 5 # number of domains, here 5
rho <- 0.5 # size of correlation, here .5
cutoff <- qnorm(0.95) # 90. percentil for top 10%
# Covariance matrix
Sigma <- matrix(rho, nrow = p, ncol = p)
diag(Sigma) <- 1
# Simulation multivariate normality
n <- 1e6
X <- mvrnorm(n, mu = rep(0, p), Sigma = Sigma)
# Test for each case, if at least one domain exceeds cut off
success <- apply(X, 1, function(row) any(row > cutoff))
# rsult
prob <- mean(success)
cat("estimated probability:", prob, "\n")  # percentage of sample in selected group
```