# The I of students with ID or SEBD

Douma, Ivonne; de Boer, Anke; Minnaert, Alexander; Grietens, Hans

*Published in:*
Educational Research Review

*DOI:*
10.1016/j.edurev.2022.100449



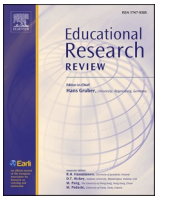
*Publication date:*
2022

Educational Research Review 36 (2022) 100449

Contents lists available at ScienceDirect

Educational Research Review

journal homepage: www.elsevier.com/locate/edurev



# The I of students with ID or SEBD: A systematic literature review of the self-concept of students with ID or SEBD

Ivonne Douma [a,*], Anke de Boer [a], Alexander Minnaert [a], Hans Grietens [a,b]

[a] Department of Inclusive and Special Needs Education, University of Groningen, Grote Rozenstraat 38, 9712, TJ Groningen, the Netherlands
[b] Department of Parenting and Special Education, KU Leuven, Oude Markt 13, 3000, Leuven, Belgium

ARTICLE INFO

*Keywords:*
Inclusive education
Special educational needs
Academic self-concept
Social self-concept
Social Comparison Theory

ABSTRACT

With the trend towards inclusive education, today there are many different school settings in which students with an intellectual disability (ID) or social, emotional and behavioural difficulties (SEBD) are educated. According to the Social Comparison Theory of Festinger, educational contexts influence the self-concept development of these students. This systematic review aims to provide an overview of literature over the last 20 years focusing on the self-concept of students with ID or SEBD in different school settings, in relation to typically developing peers and the relationship between self-concept and various variables. The results of the 15 articles identified for this review mainly indicate neutral self-concept scores. Studies focus primarily on students with ID and on the social and academic dimensions of self-concept. Students in special education tend to score slightly more positive than students in other school settings and students with ID or SEBD report a more negative self-concept than typically developing peers. Most variables included in the studies show no correlation with self-concept. Findings also revealed difficulties in the feasibility of comparison between studies due to statistical shortcomings and lack of clarification in the identified articles. Future directions for self-concept research are discussed comprehensively.

## 1. Introduction

The inclusion of students with special educational needs (SEN) in regular mainstream education has been strongly promoted in recent years, galvanized by international covenants such as the Salamanca Statement (UNESCO, 1994) and later the United Nations Convention on the Rights of People with Disabilities (United Nations, 2006), as well as Sustainable Development Goal 4 (United Nations, 2015). These covenants emphasize the importance of inclusive education, with the Salamanca Statement in particular contributing to increasing awareness of inclusion worldwide (Hernández-Torrano et al., 2020). In the current study, *inclusive education* is defined as education in which all students, regardless of any difficulties or disabilities, are educated together and whereby the educational environment ensures individualized support in order to maximize both academic and social development (UNESCO, 1994; United Nations, 2006). This definition implies that all students with or without SEN should be provided with an education tailored to their individual educational needs within the context of a mainstream educational environment, and as such, all mainstream school settings nowadays should be considered inclusive. The approach fostered in all these statements emphasizes the importance of

* Corresponding author.
*E-mail addresses:* f.m.douma@rug.nl (I. Douma), anke.de.boer@rug.nl (A. de Boer), a.e.m.g.minnaert@rug.nl (A. Minnaert), hans.grietens@kuleuven.be (H. Grietens).

https://doi.org/10.1016/j.edurev.2022.100449
Received 24 March 2021; Received in revised form 17 February 2022; Accepted 25 February 2022
Available online 9 March 2022

educational environments that maximize the academic and social development of all students, with or without SEN.

Despite the impetus towards inclusive education, the educational contexts for students with SEN remain decidedly varied. Although a growing number of students with SEN are attending mainstream education, a relatively large student body across many countries is still educated in special school settings, in which students with SEN are educated in segregation from their typically developing peers. For example, in the Netherlands, approximately 5% of all Dutch primary and secondary students are enrolled in special education (CBS, 2019); in England, 9% of students with SEN attend special education (Department for Education, 2018); and in the United States, this percentage rises to 14% (National Center for Education Statistics, 2020). A substantial number of these students have an intellectual disability (ID) or are students with social, emotional and behavioural difficulties (SEBD). In the current study, *students with ID* refers to students with limitations in intellectual functioning and adaptive behaviour, whereas the term *SEBD* is indicative of the presence of internalizing and externalizing behavioural difficulties. Even though there is a longstanding tradition and effort to include students with specific learning disorders in mainstream education, the inclusion of students with ID or SEBD has taken longer to become the new standard of practice (IDEA, 2004). The number of students with ID or SEBD placed or moved to special education has remained stably high (Algozzine, 2017; Hornby & Evans, 2013).

Inclusive education is important for the development of all students, and therefore also for students with ID or SEBD. It is thought that inclusive education provides all students with equal opportunities by supporting their social-emotional development and social well-being, in addition to fostering academic achievement (Eriksson & Granlund, 2004; Knickenberg et al., 2020). As such, inclusive education is closely interwoven with social participation (Bottrell & Goodwin, 2011). Social participation is understood in terms of four key themes, all paramount for the social-emotional development of students: 1) reciprocal friendships, 2) interaction with peers, 3) acceptance by peers and 4) a positive (social) self-concept (Koster et al., 2009). Most research into the four themes of social participation has focused primarily on friendships and acceptance, and, albeit to a lesser extent, on peer interactions (Bossaert et al., 2013; Garrote et al., 2017). The self-concept of students has been relatively overlooked in comparison, although a renewed focus on this topic seems to have arisen in more recent research (Maïano et al., 2019).

This renewed focus on the self-concept is important because the forming and evolution of a positive sense of self, and therefore the advancement of one's self-concept, is considered to be one of the most important steps in both the social and emotional development of individuals (Allport, 1954; Cooley, 1902; James, 1890; Marsh, 1990). The subject of the 'self' is an elusive theme that has been studied for many years, centuries even. Its origins can be found in the mid-1600s in the work of John Locke (1894), expanded upon in the late 1800s by the contributions of William James (1890) among others.

*Self-concept* can be understood as the set of cognitive beliefs one has about oneself. It is viewed as a multidimensional construct which therefore allows for distinctions to be made between a global self-concept and various specific domains of the self-concept, such as a social self-concept or academic self-concept (Marsh & Hattie, 1996; Marsh & Shavelson, 1985). Throughout the scientific literature, many different terms are used interchangeably to define the self-concept of individuals (Butler & Gasson, 2005; Byrne, 1996; Leary & Tangney, 2012; Shavelson et al., 1976), such as self-esteem, self-competence, self-image, self-worth and self-perception. Leary and Tangney (2012) even found as many as 66 different terms used to reference the 'self'. In the current study, the above-mentioned definition of self-concept will be used.

The self is viewed as one of the key motivators for any human behaviour, and some theorists consider the self-concept to be the most fundamental for understanding the behaviour of an individual (Epstein, 1973). The importance of a positive self-concept has been demonstrated in numerous studies. In general, a positive self-concept is associated with better coping with stress and anxiety, prosocial behaviour and overall well-being (Gupta & Thapliyal, 2015; Harter, 2012), whereas a negative self-concept is associated with depression and loneliness and is a mediating factor in the development of internalizing and externalizing problems (Harter, 1993; Lee & Stone, 2012; Ybrandt, 2008). More specifically from an educational viewpoint, a more positive self-concept contributes to enhanced academic performance and persistence in school of students with and without disabilities (Guay et al., 2003; Marsh, 1990; Valentine et al., 2004; Yauman, 1980). These findings emphasize the idea that the cultivation of a positive self-concept is of great importance for all students, including students with ID or SEBD.

The development of the self-concept of students is highly influenced by their social environment such as the educational context. In his well-established Social Comparison Theory, Festinger (1954) stated that social comparison is an important mechanism through which the self-concept of individuals is formed. He argued that individuals possess an innate desire to evaluate themselves, often doing so by comparing themselves to others. These comparisons could be viewed as the building blocks by which the self-concept is constructed, most importantly, making comparisons in relation to significant or other peers. Consequently, the school context is of great importance, as students spend the majority of their time in school, and it can be argued that the educational context should always be considered in research into the self-concept of students. At a young age, until the age of seven or eight years, children lack the cognitive-developmental acquisitions needed to make apt social comparisons and therefore the accuracy of their self-concept is insufficient. With age, however, children learn to compare themselves more reliantly to others and learn to integrate both negative and positive evaluations into an overarching and more accurate, realistic, differentiated and stable self-concept. Research on self-concept shows that the self-concept is generally very positive in early childhood and becomes more neutral in middle to late childhood. Adolescence marks a transitional period in which many biological and societal changes occur. These changes are reflected in the global self-concept, which ebbs in early adolescence. In late adolescence, however, this negative devaluation of the self is restored and during this time a more neutral self-concept is regained by most adolescents (Crain, 1996; Harter, 1983, 2012).

The normative development of self-concept is established, however, not much is known in literature about the development of the self-concept in students with ID or SEBD. As a result, it is unclear if they have a comparable development of self-concept, or how the development of self-concept of students with ID or SEBD differs from their typically developing peers. Students with SEBD seem to develop their self-concept similarly to students without disabilities (e.g., Zweers et al., 2020). Research on students with ID is more

ambiguous. Some studies found a normative development of self-concept in students with ID (e.g., Glenn & Cunningham, 2001), while other studies assume students with ID have an inverse development for their academic self-concept since with increasing age they become more aware of their academic challenges and develop a more negative self-concept (e.g., Chapman, 1988).

Whether or not students with ID or SEBD have a similar developmental trajectory as students without disabilities may remain uncertain, the importance of educational context for the development of self-concept is relevant for typically developing students and students with ID or SEBD alike. In the attempt to move towards a more inclusive school system, many intermediate forms of schooling such as pull-out classrooms (Avramidis & Norwich, 2002) and self-contained classrooms (Spencer, 2013) have arisen. The variations in school contexts results in very different school environments for students with ID or SEBD. According to Social Comparison Theory, this may impact the development of a student's self-concept. It is therefore probable that the self-concept of students with ID or SEBD will be influenced by their educational setting. This has, for instance, been demonstrated by the Big-Fish-Little-Pond-Effect (BFLPE) (Marsh, 1987; Marsh & Parker, 1984). Applying the BFLPE to students with ID or SEBD, the BFLPE might result in a more negative self-concept on multiple dimensions of self-concept, such as academic and social self-concept. After all, students with a disability such as ID or SEBD residing in mainstream classrooms develop a more negative (academic) self-concept due to the continuous negative evaluations of their own capabilities in comparison to their typically developing peers.

Research outcomes about the self-concept of students with ID across different educational settings have thus far shown ambiguous results. Some studies have found that students with disabilities have a very positive self-concept (Avramidis, 2013; Sze & Valentin, 2007), while other research has shown a neutral or low self-concept (Pijl et al., 2010; Sacks & Kern, 2008). The metanalysis of Krämer et al. (2021) found no differences in self-concept between students with a learning disorder in mainstream or special education, whilst Elbaum (2002) found that students with specific learning disorders in regular school settings exhibited lower self-concepts than students in special schools. Students with learning disabilities were found to have a lower academic self-concept than typically developing students (Bear et al., 2002; Zeleke, 2004); however, findings on other dimensions, particularly on the social and global dimensions of self-concept, were inconclusive. The review studies of Zeleke (2004) and Maïano et al. (2019) found equivocal results on global self-concept for students with learning disabilities, with most studies reporting no differences with typically developing youth, while other studies reported significantly higher levels of global self-concept for students with learning difficulties. A similar negative result for students with learning disabilities emerges from the findings of both review studies with respect to social self-concept. These negative findings are consistent with findings in several other studies (Pijl et al., 2008).

The relatively scarce research into the self-concept of students with SEBD has indicated significantly lower scores on several dimensions of their self-concept, most notably the social and behavioural aspects of self-concept (Chisolm, 2015; Gresham & MacMillan, 1997). Students with SEBD often display problem behaviour, leading them to be rejected more and accepted less by their peers. This generally has a negative impact on the self-concept of students with SEBD (e.g., Kauffman & Landrum, 2017). Wei and Marder (2012) found similar lower scores on social self-concept and lower scores on the academic self-concept in students with emotional problems or autism spectrum disorder. However, due to positive illusory bias, a phenomenon whereby there is a discrepancy between students' own perceptions of themselves and objective measures, most students with SEBD actually report similar levels of self-concept compared to typically developing students (Hoza et al., 1993, 2002).

Not only are research findings concerning the self-concept often inconclusive, the majority of studies also do not differentiate between types of disability (e.g., students with ID or students with SEBD). Great differences are also discernible in the dimensions of self-concept included in studies that investigate this multidimensional construct (Harter, 2012). Furthermore, a comprehensive overview taking into account different educational settings in relation to self-concept is lacking in scientific research. As mentioned above, there are now many alternative educational contexts to mainstream education in which students with ID or SEBD are educated, amongst them are special education classes. Understandably, students in special education have different comparison groups than students in mainstream education or inclusive education, and it could be hypothesized that students with ID or SEBD in special education might develop their self-concept differently than students with ID or SEBD in mainstream settings. Self-concept cannot be fully understood without considering the educational setting. However, research into the relationship between different educational contexts and the self-concept of students with ID or SEBD is scarce, therefore making it paramount to investigate this topic further.

The purpose of this study is to fill the research gap in scientific literature by conducting a systematic literature review. This review will focus on the dimensions of self-concept studied in the last two decades since the ratification of the Salamanca Statement (UNESCO, 1994), concentrating on research on students with an intellectual disability or social, emotional and behavioural difficulties across different educational settings. The first aim of this review is to map which aspects or dimensions of self-concept have been studied in recent years. The second aim is twofold: a) to compare the self-concept of students with ID to typically developing students and the self-concept of students with SEBD to typically developing students and b) to give insight into the self-concept of the two groups of students with a disability educated in different school settings. The final aim of this systematic review is to identify which of the variables investigated are related to the self-concept of students with ID or SEBD and to what extent.

## 2. Method

### 2.1. Search procedure

A systematic literature review was conducted in adherence with the guidelines of the protocol of the preferred reporting items for systematic reviews and meta-analyses (PRISMA-P; Moher et al., 2009). A comprehensive and systematic search was performed in October 2019 via EBSCOhost across the databases PsychINFO, SocINDEX, ERIC and MEDLINE for the timeframe of January 2000 to October 2019. The Salamanca Statement in 1994 resulted in an increase in research interest on the topics of inclusion, social

participation and, consequently, the self-concept of students with SEN such as students with ID or SEBD (Van Mieghem et al., 2020). With the implementation of new policies, there is often a delay before these principles are fully embedded by scholars in their work. According to the citation analysis of Graham et al. (2020), there has been an increase in research referencing the Salamanca Statement from 2000 onwards. Hence, the timeframe of 2000–2019 was chosen to specifically capture research executed in the context of these new developments. The databases were searched for articles that addressed the self-concept of students with special educational needs, specifically students with ID or SEBD, in various educational settings. Students with learning disabilities were not included in this review, since there have been numerous studies focusing on this population in particular (see Swanson et al., 2013 for a comprehensive overview).

The keywords that were used in the literature search were chosen based on the Person, Intervention and Outcome (PICO) model. A detailed overview of all search terms utilized can be found in Table A1 (see Appendix). The search combined terms on three different topics, regarding:

- Person: students with ID or SEBD (e.g., intellectual disability*, behav* disorder*, special education* need*, anxiety, ADHD, autism, and internal* and external* problem*)
- Intervention: the educational setting (e.g., inclusive education, special education, special class* and general and mainstream education)
- Outcome: self-concept of students (e.g., self-concept, self-esteem, self-competence and self-perception)

The search terms used and the descriptors for identifying students with ID or SEBD were deliberately kept broad since there is a great diversity in terms used in the scientific literature to refer to these groups of students. In addition to the primary search, references from literature reviews and articles were searched for further studies that met the inclusion criteria. The search was specified to include only peer-reviewed articles solely published in academic journals and written in English.

### 2.2. Inclusion criteria

Articles included in this review had to meet the following inclusion criteria:

(1) The study included outcome measures related to the self-concept or self-perception, or the cognitive evaluation of oneself. This concerned either general domains of the self-concept (e.g., global, social or scholastic self-concept) or more specific domains (e.g., reading or mathematics competence). These self-concept outcomes had to be derived from self-report measurements.
(2) The study focused on students with ID and/or SEBD, as specified in the search terms. Articles that employed an overly broad definition of disabilities (e.g., specific learning disorders such as dyslexia), without any additional specification, clarification or elaboration on the special educational needs of the student population, were not included, nor were studies in which participants had the co-occurrence of multiple disorders and/or medical problems (e.g., chronic or mental illness, eating disorder, epilepsy or drug abuse).
(3) Students participating in the study fell within the age range of 6 through 18 years. A study was also included if at least 75% of all students fell within the inclusion criteria of age range.

**Table 1**
Summary of the main characteristics of the selected studies.

| Study | School setting | | Type of disability | | | Questionnaires | Grade or Age | Sample size (N) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | MS | SE | ID | SEBD | Mixed | | | ID/SEBD | Total SEN | TD |
| Avramidis (2013)[1] | x | | | | x | SPPC | Grade 5–6 | 95 | 101 | 465 |
| Avramidis et al. (2018)[2] | x | | x | | | SDQI | Grade 4–6 | 45 | | 412 |
| Bussing et al. (2000)[3] | | x | | x | | Piers-Harris | Grade 2–4 | 143 | | 485 |
| Cambra and Silvestre (2003)[4] | | x* | | | x | SCS** | Grade 4–8 | 10 | 29 | 68 |
| Conley et al. (2007)[5] | x | | | | x | Self-esteem Scale | 16.4 | 38 | 48 | |
| Crabtree and Rutland (2001)[6] | | x | x | | | SPPC** | 11–16 | 145 | | 145 |
| Koster et al. (2010) [7] | x | | | | x | SPPC, PSPCSA | Grade 1-3 | 94 | | 141 |
| LaBarbera (2008)[8] | | x | x | | | SPPLD** | Grade 4–8 | 66 | | |
| McCauley et al. (2018)[9] | x | | | x | | SDQI | Grade 3–11 | 44 | | 36 |
| Nader-Grosbois (2014)[10] | | x | x | | | SPPLD | 11–16 | 15 | 32 | 28 |
| O'Byrne and Muldoon (2017)[11] | | x | x | | | SPPLD | 12–14 | 54 | 54 | |
| Pijl and Frostad (2010)[12] | x | | | | x | SDQI | 12–13 | 15 | 37 | 461 |
| Russell et al. (2002)[13] | | x | x | | | ASK-KIDS | 6.2–12.2 | 39 | | 40–241 |
| Scanlon et al. (2019)[14] | x | | | | x | BSS | 11–14 | 24 | | 11 |
| Szumski and Karwowski (2015)[15] | x | | x | | | SSASC | 9–13 | 605 | | |

*Note:* * special private school; ** adjusted version; MS: mainstream; SE: special education; ID: intellectual disability; SEBD: social, emotional and/or behavioural difficulties; SEN: special educational needs; TD: typically developing; SPPC: Self Perception Profile for Children; SDQI: Self-description Questionnaire; Piers-Harris: Piers-Harris Children's Self-Concept Scale; SCS: Self-concept Scale; PSPCSA: Pictorial Scale of Perceived Competence and Social Acceptance; SPPLD: Self-perception Profile for Learning Disabled; ASK-KIDS: ASK-KIDS Self-Concept Inventory for Children; BSS: Burnett Self Scale; SSASC: Short Scale of Academic Self-Concept.

(4) The students were attending either mainstream schools, inclusive schools or classrooms, or special education school settings. The outcomes of the studies had to be discussed within school contexts.
(5) Studies reported quantitative empirical data on the self-concept of the students with ID and/or SEBD. When mixed groups were studied, articles that allowed a distinction to be made between the different subgroups were also included in the review.

Review studies and single and multiple case studies were excluded from the review, as well as meta-analysis studies and intervention studies.

### 2.3. Selection procedure

The selection procedure accessing the eligibility of the studies was conducted following the guidelines of PRISMA-P and in three consecutive phases. The first phase consisted of title screening, in which titles of articles were compared to the inclusion criteria. In the second phase, the same procedure was followed for abstracts of articles. Articles that could not be excluded based on either the title or abstract were moved to the third phase, as were articles that met the inclusion criteria. In the third phase, the full-texts of the articles were retrieved and reviewed for their eligibility.

The first phase of the systematic review was primarily conducted by the first author of the paper. The second author separately assessed a random sample of all retrieved records, in order to achieve reliability of the studies included in the review. The second author reviewed 25% of all records in both phase 1 and phase 2. Interrater reliability (IRR) of 99.2% ($\kappa = 0.60$) was reached for the inclusion of a title in phase 1, and an IRR of 92% ($\kappa = 0.83$) was reached for the abstract selection in phase 2. Discrepancies that arose between the assessments of each reviewer were discussed until consensus was attained.

The search through the selected databases resulted in a total of 2,855 articles (see Figure A1 in the Appendix for a flowchart of the selection procedure). After removing duplicates and articles published in languages other than English, a total of 2,142 articles remained. Further analysis of titles and abstracts revealed that 1,998 articles did not meet the inclusion criteria. The remaining 51 full-text articles were further assessed for eligibility, resulting in the exclusion of 37 more articles, as they did not meet the inclusion criteria. This resulted in 15 articles that were deemed eligible and were included in this review.

### 2.4. Data extraction from selected articles

All relevant data were extracted from the selected articles by the first author. Firstly, the descriptive characteristics of each study were extracted, such as authors, publication date, country of origin, a description of the educational setting, and participant statistics. When multiple groups of students with SEN were included, data was gathered on each group individually if it was deemed relevant within the focus of the review. Secondly, all relevant information concerning the self-concept was extracted from the articles, such as the definition of self-concept used (if any was reported), measurements used, and the domains of self-concept that were measured. Finally, all self-concept outcomes were extracted from the full-text articles. To determine whether the reported self-concept scores were either negative, neutral or positive, the raw scores were labelled. Labelling was based on either known standardized scores or by

**Table 2**
Overview of self-concept dimensions and outcomes included.

| | | Dimensions of self-concept | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *SC* | *SA* | *SOC* | *AC* | *PA* | *BC* | *GS* | *TSC* | *Other* | *RCO* | *WCO* | *SCO* | *MCO* | *GIA* |
| *Mainstream education* | | | | | | | | | | | | | | | |
| Avramidis (2013) | *ID* | n | n | | n | n | n | | | | | | | | |
| | *SEBD* | n | n | | n | n | n | | | | | | | | |
| Avramidis et al. (2018) | | | | + | | | | | | | | | | | |
| Conley et al. (2007) | | n | | n | n | n | | n | | n/+ | | | | | |
| Koster et al. (2010) | | | n | | | | | | | | | | | | |
| McCauley et al. (2018) | | | | | | | | | | | n | | | n | |
| Pijl and Frostad (2010) | *ID* | n | | n | | | | + | | | | | | | |
| | *SEN* | n | | + | | | | + | | | | | | | |
| Russell et al. (2002) | | | | | n | n | | | | n | n | | | – | |
| Scanlon et al. (2019) | | n | n | | n | n | | n | | -/n | n | | | n | |
| Szumski and Karwowski (2015) | | n | | | | | | | | | | | | | |
| *Special education* | | | | | | | | | | | | | | | |
| Bussing et al. (2000) | | n | n | | | n | n | | n | n | | | | | |
| Cambra and Silvestre (2003) | | + | | + | | + | | + | | | | | | | |
| Crabtree and Rutland (2001) | | n | n | | n | n | n | n | n | | | | | | |
| LaBarbera (2008) | | | | + | + | + | n | + | | | n | n | n | + | + |
| Nader-Grosbois (2014) | | n | + | | n | + | n | n | | | n | n | n | n | |
| O'Byrne and Muldoon (2017) | | | n | | n | n | n | n | | | n | + | – | n | n |

*Note:* ID: intellectual disability; SEBD: social, emotional and/or behavioural difficulties; SC: scholastic competence; SA: social acceptance; SOC; social competence; AC: athletic competence; PA: physical appearance; BC: behavioural conduct; GS: global self-worth; TSC: total self-concept; Other: other dimensions; RCO: reading competence; WCO: writing competence; SCO: spelling competence; MCO: mathematics competence; GIA: general intellectual ability; +: positive self-concept outcomes; -: negative self-concept outcomes; n: neutral self-concept outcomes.

**Table 3**
Significance and effect sizes of the comparison of the self-concept between students with ID or SEBD and TD students.

| | Type of SEN | Sample sizes (*n*) | | Significant differences | No significant differences | Calculated Cohen's *d* |
|---|---|---|---|---|---|---|
| | | SEN | TD | | | |
| Avramidis (2013) | ID | 82 | 465 | Athletic competence -<br>Physical appearance - | Scholastic competence<br>Social acceptance<br>Behavioural conduct | Scholastic: 0.18<br>Social Acceptance: 0.21<br>Athletic Competence: 0.43<br>Physical Appearance: 0.30<br>Behavioural conduct: −0.04 |
| | SEBD | 13 | 465 | Athletic competence -<br>Physical appearance - | Scholastic competence<br>Social acceptance<br>Behavioural conduct | Scholastic: −.31<br>Social Acceptance: .24<br>Athletic Competence: 0.22<br>Physical Appearance: 0.23<br>Behavioural conduct: −0.17 |
| Avramidis et al. (2018) | ID | 45 | 412 | | Social self-concept | Social self-concept: 0.07 |
| Bussing et al. (2000) | SEBD | 143 | 485 | – | – | – |
| Cambra and Silvestre (2003) | Mixed | 29 | 68 | Social self-concept -<br>Academic self-concept - | Personal self-concept | Social self-concept: 0.49<br>Personal self-concept: 0.02<br>Academic self-concept: 0.86 |
| Conley et al. (2007) | Mixed | | | – | – | – |
| Crabtree and Rutland (2001) | ID | 145 | 145 | Social acceptance -<br>Behavioural conduct -<br>Physical appearance + | Scholastic competence<br>Athletic competence<br>Global self-esteem | Scholastic: −0.10<br>Social: 0.25<br>Athletic: −0.14<br>Behavioural: 0.24<br>Physical: −0.62<br>Global: 0.03<br>Total: −0.12 |
| Koster et al. (2010) | Mixed | 94 | 141 | – | Social self-concept | Social grade 1–2: 0.07<br>Social grade 3: −0.05 |
| LaBarbera (2008) | ID | | | – | – | – |
| McCauley et al. (2018) | SEBD | 44 | 36 | | Mathematics self-concept<br>Reading self-concept | Math self-concept: 0.25<br>Reading self-concept: 0.38 |
| Nader-Grosbois (2014) | ID | 32 | 28 | Reading competences - | Cognitive ability<br>Writing competence<br>Spelling competence<br>Mathematics competence<br>Social acceptance<br>Athletic competence<br>Physical appearance<br>Behavioural conduct<br>Global self-concept | Cognitive ability: 0.11<br>Reading competence: 0.64<br>Writing competence: 0.23<br>Spelling competence: 0.27<br>Mathematics competence: 0.13<br>Social acceptance: 0.12<br>Athletic competence: −0.05<br>Physical appearance: 0.10<br>Behavioural conduct: 0.37<br>Global self-concept: 0.21 |
| O'Byrne and Muldoon (2017) | ID | | | – | – | – |
| Pijl and Frostad (2010) | ID | 37 | 461 | Academic self-concept –<br>Social self-concept - | Global self-worth | Global self-worth: −0.03<br>Academic self-concept: 1.12<br>Social self-concept: 1.14 |
| | Mixed | 37 | 461 | Academic self-concept – | Global self-worth<br>Social self-concept | Global self-worth: 0.31<br>Academic self-concept: 0.77<br>Social self-concept: 0.28 |
| Russell et al. (2002) * | ID | | | Number - | Reading<br>Drawing<br>Friendship<br>Expression<br>Belonging<br>Individuality<br>Motor<br>Body<br>Appearance | Reading: 0.43<br>Number: 0.81<br>Drawing: −0.39<br>Friendship: 0.16<br>Expression: −0.08<br>Belonging: 0.02<br>Individuality: 0.34<br>Motor: 0.20<br>Body: −0.40<br>Appearance: 0.36 |
| Scanlon et al. (2019) | ID | 24 | 11 | – | – | Total score: 0.48** |
| | SEBD | 24 | 11 | Physical appearance +<br>Relationship mother - | Physical Ability<br>Relationship with peers<br>Relationship with father<br>Reading<br>Maths<br>Learning<br>Global self-esteem | Total score: 0.68** |
| Szumski and Karwowski (2015) | ID | | | – | – | – |

*Note:* * based on comparisons with a normative sample; ** information to perform (further) calculations not available.

labelling the scores based on the Likert scale used. Most instruments used a four-point Likert scale. In that case, scores of 1 were classified as negative outcomes, scores of 2 and 3 were labelled as neutral and scores of 4 were classified as positive. When raw scores were not provided, the assessments reported by the authors of the study were followed. In addition to the statistical evidence, the effect size of the reported outcomes was extracted (see Table A2 (see Appendix)). When effect sizes were not reported in the article, they were calculated utilizing the online calculator of Lenhard and Lenhard (2016).

## 3. Results

### 3.1. Main characteristics of the reviewed studies

Based on the selection process, 15 studies were included in this review and are presented in Table 1. The 15 studies show differences in terms of school setting, sample sizes, student characteristics and methodology. The *settings* varied from mainstream education (9), special education (6), and the remaining studies (2) combined multiple school settings within their research. *Sample sizes* across studies varied, ranging from 24 to 605 students with SEN (consisting partly of students with ID or SEBD), and 11 to 465 typically developing students. Several studies focused on one particular *age* group (e.g., primary education), while others included a broader age range of participants with ID or SEBD. Seven studies focused on primary school-aged children (ages 6–12), three on adolescents (ages 11–16) and six on both children and adolescents (ages 9–17). The majority of the studies focused on students with one *type of disability*, of which students with ID were most commonly studied (7). Only two studies focused on students with SEBD (i.e., students with ADHD and ASD) and six studies included both students with ID and students with SEBD. A majority of the studies neither provided definitions nor descriptions of the type of disability of the students who were included. A broad range of different *methodologies* was used. Among the selected studies, nine different questionnaires were used to assess self-concept, with several studies also developing a modified version of an existing questionnaire. The Self-description Questionnaire I (SDQI) (3) and Self-perception Profile for Learning Disabled (SPPLD) (3) were the most frequently used. Similar to the student population descriptions, most studies did not provide definitions of self-concept. Studies that did specify what was meant by the term varied in their interpretation, most often describing self-concept as the perception of one's competences or abilities. One study referred to self-concept as 'the attitude toward oneself' (see LaBarbera, 2008), whereas several studies used different terms interchangeably, such as self-worth, self-esteem and self-competence.

### 3.2. Dimensions of self-concept

Some dimensions of self-concept were more frequently addressed than others. Overall, 26 different dimensions of self-concept were derived from the studies selected, as illustrated in Table 2. Of those, 14 were explored by more than one study, whereas the remaining 12 were limited to a single study. These dimensions are categorized in Table 2 under the heading '*Other*'. Firstly, Conley et al. (2007) included the dimensions of *musical ability*, *artistic ability*, *leadership skills* and *common sense* in their study, while Bussing et al. (2000) included *anxiety* and *happiness/satisfaction*. The *relationship with mother* and *father* were investigated in the study by Scanlon et al. (2019). Finally, Russell et al. (2002) included the dimensions of *drawing*, *expression*, *belonging* and *individuality*.

Almost all of the studies included the dimensions of scholastic competence (9), physical appearance (10), global self-worth (9), social acceptance or competence (12) and athletic competence (8). Studies that did not include academic competence as a whole, focused on specific academic areas, such as reading, writing and mathematics competences. Only one study did not address any aspect of scholastic self-concept.

### 3.3. Comparisons between the self-concept of students with ID or SEBD and typically developing (TD) students

Ten studies in this review compared the self-concept reported by students with ID or SEBD to the scores of typically developing students. The comparisons between students with ID or SEBD and typically developing students that yielded significant differences were virtually all disadvantageous for students with a disability, with only two studies finding advantageous results for this group of students. The positive comparisons were found on the dimension of physical appearance, assessed by students with ADHD or ID. In contrast, another study found an adverse effect and concluded that students with ID perceived a significantly more negative self-concept concerning their physical appearance. Furthermore, the statistical evidence derived from the studies showed negative outcomes for students with ID or SEBD in comparison to typically developing students in the domains of athletic competence ($k = 2$), social acceptance or social self-concept ($k = 3$), and on academic self-concept or specific dimensions of academic self-concept ($k = 5$). No negative outcomes were found on global or total self-concept. The majority of studies mostly found non-significant differences in the self-concept dimensions that were included in their study.

The sample sizes within the selected studies varied greatly, most often consisting of smaller groups of students with disabilities. Therefore, there is the potential for lack of power issues in the analyses used in each study. To counterbalance this, substantive significance in the form of effect sizes (Cohen's *d*) was calculated (if possible), since the effect size is independent of sample size (see Table A2 in Appendix for the classification of effect sizes). The results are shown in Table 3. Looking at the effect sizes, some differences were found compared to the reported statistical significance. A small effect size for social acceptance was discernible in two different studies, and three studies had a small effect size on either academic self-concept or a specific dimension of academic self-concept. Furthermore, three studies found small to medium effect sizes on global self-concept.

**Table 4**
Variables researched and the correlation to self-concept in the studies included in the systematic review.

| Dimensions of self-concept | Variables researched in relation to the dimension of self-concept | Not significant or no correlation | Negative correlation* | Adverse correlation | Small correlation | Moderate correlation | Large correlation | Positive correlation* |
|---|---|---|---|---|---|---|---|---|
| Scholastic or academic self-concept | Peer acceptance | 4, 12[c] | | | | 12[a] | | |
| | Importance domain | 5 | | | | | | |
| | Internalizing problems | | 3 | | | | | |
| | School setting | | | | | | | 15 |
| Social self-concept | Peer acceptance | 2, 4, 12[ac] | | | | | | |
| | Companionship | | | | 2 | | | |
| | Importance domain | | | | 5 | | | |
| | Internalizing problems | | 3 | | | | | |
| | Peer support | | | | | 8 | | |
| | School setting | | | | | | | |
| | Type of disability | 7 | | | | | | |
| Athletic competence | Importance domain | | | | | 5, 10 | | |
| | Peer support | | | | 8 | | | |
| Physical appearance | Importance domain | 5 | | | 10 | | | |
| | Parental support | | | | | 8 | | |
| | Peer support | | | | | 8 | | |
| | School setting | | | | | | | |
| | Age | | | 10 | | | | |
| | Verbal comprehension | | | | 10 | | | |
| | Learning competency | | | 15 | | | | |
| Behavioural conduct | Importance domain | | | | 10 | | | |
| | Internalizing problems | | 3 | | | | | |
| | Parental support | | | | 8 | | | |
| | Peer support | | | | 8 | | | |
| Global self-concept | Peer acceptance | 12[ac] | | | | | | 4 |
| | Parental support | | | | | 8 | | |
| | Peer support | | | | 8 | | | |
| | School setting | | | | | | | |
| | Minority status | | | | | | | 3 |
| Total self-concept | Type of disability | 1[ab], 5, 13, 14 | | | | | | |
| | Severity of disability | 1[ab, 12] | 3 | | | | | |
| | Gender | 1[ab], 3, 6, 11 | | | | | | |
| | Age | 3, 6 | | | | | | |
| | SES | 3 | | | | | | |
| | ADHD medication | 3 | | | | | | |
| | Internalizing problems | | 3 | | | | | |
| | Achievement | 5, 13 | | | | | | |
| | School setting | 3 | | | | | | |
| | School absences | 5 | | | | | | |
| | Stigma | 11 | | | | | | |
| Other | Importance domain | | | | 5 | 5 | | |
| | Internalizing problems | | 3 | | | | | |
| Reading competence | Importance domain | | | | 10 | | | |
| Writing competence | School setting | | | | | | | |
| Spelling competence | School setting | | | | | | | |
| Mathematics competence | Importance domain | | | | 10 | | | |
| | Parental support | | | | 8 | | | |
| | Peer support | | | | 8 | | | |
| | School setting | | | | | | | |
| | Age | | | | 10 | | | |
| General intellectual ability | Parental support | | | | 8 | | | |
| | Peer support | | | | 8 | | | |
| | School setting | | | | 8 | | | |

Note: SC: scholastic competence; SA: social acceptance; SOC; social competence; AC: athletic competence; PA: physical appearance; BC: behavioural conduct; GS: global self-worth; TSC: total self-concept; Other: other dimensions; RCO: reading competence; WCO: writing competence; SCO: spelling competence; MCO: mathematics competence; GIA: general intellectual ability; [a]: mixed study, results apply specifically to students with ID; [b]: mixed study, results apply specifically to students with SEBD; [c]: mixed study, results apply to a mixed group of students with SEN; * strength of correlation not reported in the article; **the numbers refer to the studies as listed in Table 1.

### 3.4. The self-concept of students with ID or SEBD

The results for students with ID or SEBD on the different dimensions of self-concept show that most studies found neutral scores or scores that fell within the normal range on all the different self-concept dimensions (Table 2). Students with ID or SEBD mostly reported positive scores on the physical appearance dimension ($k = 2$) and on social aspects of self-concept ($k = 5$), indicating students with ID or SEBD feel capable of making friends, behaving in such a way that others like them and others accept them. Although some positive perceptions were found in certain scholastic domains of self-concept, these dimensions were simultaneously found to be more negatively viewed by students with ID or SEBD in other studies.

Identifying variations of self-concept between students with ID or between students with SEBD based on different school contexts and students with different types of disabilities, the results indicated mainly *neutral scores* for students with ID or SEBD in *mainstream education* settings. Three out of the nine studies found positive results, on both the social competence dimension of self-concept and global self-worth. Four out of the six studies that were performed in *special education* settings found positive results on various dimensions of self-concept. Due to the widely uneven distribution of comparable student groups within each educational setting (i.e. age and type of disability), it was not possible to determine differences per subgroup in each educational setting.

The two studies concentrating primarily on students with SEBD only obtained neutral results, as did the majority of studies with a mixed population. Two studies differentiated within their mixed sample, with one study finding no differences between the self-concept of the students with ID and SEBD in their sample, while the second study found more positive scores for students with SEBD in their sample on the social competence dimension. Articles centred around students with ID again reported mainly neutral scores. Four studies, however, found positive results in either the social competence domain or in global academic self-concept or specific academic domains.

### 3.5. Variables relating to students' self-concept

Nineteen distinct variables were explored for their relation to the self-concept in the studies reviewed. In Table 4, the *correlations* between self-concept, dimensions of self-concept and related variables are shown, as reported by the authors of the studies. Several studies did not indicate the strength of the correlation but only a direction of the effect and these results are presented under the broader description of either a negative or positive correlation in Table 4. A large number of studies did not indicate which specific dimension of self-concept did not yield significant results but spoke in general terms about self-concept. These results are categorized in Table 4 under total self-concept.

Three variables are most frequently included in the studies, namely *gender*, *type of disability* and *acceptance by peers.* Four studies examined the relationship between self-concept and *gender* and none of these studies found a relationship between gender and self-concept. One study did find an interaction effect when the severity of the disability was taken into account. Five studies distinguished or attempted to distinguish between different types of disability as a factor related to the self-concept. Four of the five studies found no significant relationship between the *type of disability* and the self-concept of the students with SEN. The remaining study was ultimately unable to determine the relationship of the type of disability and self-concept due to a limited sample size and subsequent power issues.

Whenever correlations were found between self-concept and other variables, the effects appear to be small to moderate. *Peer acceptance* ($k = 3$) was mostly found not to be significantly related to self-concept. One study found a moderate positive correlation with academic self-concept in students with ID, indicating that higher peer acceptance leads to a higher self-concept, but did not find similar results for students with SEBD. Overall, the *academic self-concept* as a whole or *specific dimensions of academic self-concept* and *physical appearance* were reported most frequently to have a relationship with other variables, with small to moderate or almost strong effects (range between $r = .36$ *to* $.78$). The strongest effect was found between academic self-concept and school placement. Two studies found that students with SEN attending special schools reported higher scores on academic self-concept than students attending mainstream education. The self-concept concerning *physical appearance* was found to have both positive and negative correlations with several variables. A negative relationship was found between the perception of appearance of students with SEN, *age*, perceived learning competence and severity of the disability, indicating that students with SEN who are older or are more negative about their learning competence, or have a more severe impairment, perceive their physical appearance less favourably.

## 4. Summary and discussion

### 4.1. Summary

Self-concept research has regained scientific interest in the last decades due to the trend towards inclusive education. This systematic review focussed on research conducted in the past two decades that was focussed on the self-concept of students with ID and SEBD educated in different educational contexts. The main aim of this systematic review study was threefold. Firstly, to clarify which dimensions of self-concept are most frequently investigated when it comes to students with ID or SEBD. The results of the review reaffirm that self-concept is a broad multidimensional construct and is approached from several different perspectives in research. This is attested to by the wide variety – 26 in total – of self-concept dimensions found in the 15 studies included. In recent years the focus of research has remained predominantly on social or academic dimensions of self-concept.

The second aim of this study was to gain a greater understanding of the self-concept of students with ID or SEBD educated in different educational contexts and how this relates to the self-concept of typically developing students. Overall, it can be concluded

that students with ID or SEBD generally assessed their self-concept as neutral on most dimensions. Although no major differences in self-concept were found between both groups, students with ID reported slightly more favourable scores than students with SEBD. When comparing both groups of students with a disability with their typically developing peers, students with a disability reported lower self-concept scores. Furthermore, it can be concluded that students with ID or SEBD attending special school settings reported the most positive scores overall when compared to students with ID or SEBD in mainstream education. Although this study intended to draw conclusions about the self-concept of students with ID or SEBD across different educational contexts, this proved not to be possible due to the widely uneven distribution of groups of students per educational setting.

Thirdly, this review aimed to elucidate which variables relate to the self-concept of students with ID or SEBD. Surprisingly, it can be concluded that almost none of the variables investigated (e.g., gender, age or type of disability) for a potential relationship to self-concept outcomes yielded either a positive or negative relationship to self-concept outcomes, except for the importance attributed to a certain domain, for which two studies found indications that it correlated positively with several self-concept outcomes.

### *4.2. Discussion*

In recent years, it has been acknowledged by policymakers that education revolves around more than purely academic achievement. Education is also meant to shape students as individuals, focusing on personal development as well as academic skills. It is therefore remarkable that since the implementation of the Salamanca Statement only 15 studies in the past two decades have focused on the self-concept of students with ID or SEBD in different educational contexts. Intriguingly, this study showed that the predominantly academic vision on education still prevails within self-concept research. This is complemented by a growing focus on the social aspects of inclusion and along with this the social self-concept. This finding is in accordance with a recent study by Van Mieghem et al. (2020), who found a similar focus on social aspects of inclusion. They concluded that much research has been conducted on social inclusion but not on self-concept (with the exception of academic self-concept).

Understandably, early post-Salamanca research predominantly focused on academic and social self-concept, considering the educational changes that were prompted by that statement. It is, however, surprising to find that there has not been a noticeable shift towards a broader view on more dimensions of the self-concept of students with ID or SEBD. This would coincide with the generally accepted multidimensional theory of self-concept (Harter, 2012). Nevertheless, the importance of self-concept on the development of all students has been established in scientific research, and a plea could thus be made to include the self-concept of students with ID or SEBD as an additional outcome measure for the evaluation of inclusive education in the future.

The current study revealed that students with ID reported more positive results on a broader range of different dimensions of self-concept than TD students, whereas students with SEBD reported mostly neutral scores compared to TD students. To emphasize, based on these specific findings it is not possible to conclude whether or not the self-concept of students with ID is more positive compared to students with SEBD, since both groups included in the review are too heterogeneous and direct comparisons cannot be made. However, this finding does suggest that there possibly are differences between the self-concept of students with ID and SEBD. There are several explanations conceivable for these differences. Firstly, it could be that students with ID are less capable of apprehending such an abstract concept, and therefore are less able to assess their own self-concept, or that they might be more socially and academically oblivious (Bear et al., 1993). Secondly, age-related differences might play an important and distinctive role in the self-concept scores of both groups of students. Due to their disability, students with ID have a discrepancy between the chronological age and the developmental age, potentially resulting in more favourable self-concept scores, since the self-concept is often more positive at a younger developmental age (Crain, 1996; Harter, 2012). Chronological age may therefore be less influential on self-concept in students with ID than in students with SEBD. Contrary to students with ID, students with SEBD typically have a developmental age congruent with their chronological age, thus the variable (chronological) age might be of greater influence on self-concept in students with SEBD. A final explanation contributing to the potential differences in findings between both groups might be that the participants of the included studies did not reach the developmental age of seven or eight years required to make accurate self-evaluations about their self-concept (Glenn & Cunningham, 2001; Harter, 1983, 2012).

Students with ID or SEBD tend to be positively biased in their self-assessments, making their self-evaluations less accurate (Cunningham & Glenn, 2004; Glenn & Cunningham, 2001). This inaccuracy as a result of overestimation could be further strengthened by the presence of positive illusory bias (Hoza et al., 1993, 2002). Alternatively, it is also possible that students with ID focus more on their capabilities rather than their disabilities (Avramidis, 2013). Bear et al. (1993) adopted a similarly positive view and suggested that, in particular, higher social self-concept scores found in students with ID are indicative of their satisfaction derived from having friends in the first place. The fact that there has been little research into the self-concept of students with SEBD in comparison to students with ID makes it more likely to find research that reports a positive self-concept in students with ID.

Findings from this review revealed furthermore that students with ID or SEBD attending special education reported the most positive self-concept results. Even though there were no indications in this review that students with ID or SEBD within mainstream education have a worrying negative self-concept, they were, however, less positive about their self-concept than students with ID or SEBD in special schools. One possible explanation for the generally higher self-concept scores of students attending special education might be that teachers within special schools have undergone more training to educate, stimulate and guide students with disabilities. As a result of their extensive training, they are better equipped to facilitate the social-emotional support needed by students with disabilities (e.g., Feng & Sass, 2013), focusing more on ability than disability and offering positive reinforcement.

Another possible explanation for the more positive views on self-concept displayed by students with ID or SEBD in special schools can be found in the BFLPE (Marsh, 1987; Marsh & Parker, 1984). It is known that students use their peers as an external reference in order to make assessments about their own competences and this, therefore, contributes to the forming of one's self-concept (Bukowski

& Raufelder, 2018). The BFLPE thus predicts that equally able students will develop their self-concepts differently as a result of social comparison with their peers. Students (e.g., students with ID or SEBD) who perceive their immediate peers (e.g., typically developing peers) as being higher achieving and more capable than themselves, will have a lower self-concept in comparison to similar students who perceive themselves as equally capable as their immediate peers. In other words, according to the BFLPE, students with disabilities such as ID or SEBD educated in mainstream classes will often draw unfavourable comparisons with typically developing peers, from which they derive negative perceptions about their own self-concept. In special classes, in contrast, students with ID or SEBD do not necessarily stand out negatively due to their disability and therefore the BFLPE will be less likely to occur or be absent. It is likely the BFLPE does play a similarly negative role in mainstream settings as it does in special education, which would explain the lower scores of students educated in these settings. Counteracting the influence of BFLPE should therefore be something to strive for in mainstream settings, either by interventions directly targeting the BFLPE or indirectly by focusing on improving teacher practices (Bressoux & Pansu, 2015; Schwabe et al., 2019).

The studies included in this review show great diversity in the allocation of students with ID or SEBD across different educational contexts. The majority of studies focusing solely on students with ID were conducted in special education settings and studies including only students with SEBD were noticeably scarce. Studies with a mixed sample of students often did not report differentiated results to draw further conclusions about either students with ID or students with SEBD within their educational context. As a result of this widely uneven distribution, and further complicated by the limited amount of studies found within this review and the omission of defined student characteristics within some of these studies, it was not possible to make comparisons or draw conclusions about the relationship between educational setting and the self-concept of neither students with ID nor students with SEBD.

Findings regarding the self-concept of students with ID or SEBD in different educational contexts are often found to be inconclusive. Some studies found indications that students report more positive self-evaluations in special education (e.g., this review), whereas other studies report findings depicting the opposite, showing a more negative self-concept for students with ID or SEBD in mainstream education compared to special education (e.g., Krämer et al., 2021). The Social Comparison Theory might shed some light on these contrasting findings (Festinger, 1954). As this theory states, self-concept is highly influenced by social comparisons to peers. Students with ID or SEBD in mainstream education have in fact two groups of reference for their comparisons, namely other students with a disability or typically developing peers. Students with ID or SEBD can choose to which group they compare themselves and even differentiate between comparison groups for distinct domains of self-concept. Consequently, this can lead to differences in the assessment of self-concept and explain why researchers have found inconsistent findings.

The results of this review highlight the continuing difficulties in operationalizations and providing definitions in scientific research. Several concerns can be identified when comparing the 15 studies in this review. There is much heterogeneity in the *type of disabilities* and the *definitions of self-concept* used within the selected studies. Due to an insufficient operationalization of the core concepts used, it was challenging to make apt comparisons. The lack of agreement in nomenclature is, in particular, discernible for the term 'self-concept', and it is questionable whether all of the studies truly researched the construct of self-concept, or whether some were more in line with other constructs, such as self-esteem. In addition to self-concept, the umbrella phrase *students with SEN* was also used frequently without a definition of the unique characteristics of these particular students. Without elaborating on the target group included, it is not possible to generalize scientific knowledge to a whole group of students with certain disabilities, therefore restricting the realization of improvements for these students.

In addition to the deficiencies in providing definitions and nomenclature, the presentation of the results in the included studies further complicates generalization. Although, at first glance, the results of this review showed little differences between students with ID or SEBD and typically developing youth, on closer examination it became apparent that most of the studies included might suffer from power difficulties. This is due to the small sample sizes that are often characteristic for studies dealing with students with SEN, since they represent only a small group of the entire student population. Although significance levels did not reveal large differences between students with ID or SEBD and their typically developing peers, the calculated effect sizes of the self-concept scores offered some nuance to these findings. Based on this systematic review, it becomes apparent once more that omitting to report effect sizes eliminates pivotal scientifically relevant information. This insight is by no means novel and has been argued by many researchers for years (e.g., Aarts et al., 2014; Cohen, 1988; Sullivan & Feinn, 2012). Many have called for additional statistical analysis, in particular of effect sizes, in addition to statistical significance testing. Especially when studying smaller groups, as in small samples significance levels are not easily met and biases in interpretation may occur. This, therefore, increases the need for added statistical support, such as data on effect sizes. The combined statistical data would help to construe relevant and correct interpretations in order to determine the gravity of differences found between groups. Although there has long been a desire for the scientific community to deliver additional reports on effect sizes, the results of this study clearly show there is still room for improvement.

From the findings of this systematic review, no direct inferences can be drawn about whether or not one school setting yields more positive self-concept scores than others because the distinctive reference groups in various educational settings hinder direct objective comparisons. Moreover, it should be noted that students with ID are overrepresented in the research conducted in special education, which might affect the results. However, the findings do raise the question of whether inclusion in its current form is the best fit for students with ID or SEBD in terms of their social-emotional development. It could, therefore, be argued that a combined educational approach might provide a more suitable alternative for students with disabilities, such as a school setting in which students with disabilities are educated in special classes but have the opportunity to be included in regular classrooms for certain lessons (Spencer, 2013). This type of education offers a more tailored approach to education, providing both educational and social opportunities for students with ID or SEBD to engage with typically developing peers, while simultaneously conserving the favourable aspects of special classrooms, such as more tailored feedback and teacher involvement. Marsh and Craven (2002) suggest that these latter preferable aspects of special classrooms offer some protection against the potential negative consequences of the BFLPE on self-concept.

The impact peers have on the development of the self-concept of students with ID or SEBD has become clear in this review. This underlines the importance of positive social comparison and the acceptance and friendships of peers. Providing students with ID or SEBD with an encouraging school environment, in which they are supported by not only teachers but also by peers, could be viewed as a key element safeguarding a positive self-concept for this special group of students. Additionally, it is important to ensure positive mutual contact between students with and without a disability by ongoing training of professionals to facilitate these relationships and by offering classrooms interventions aimed to promote peer acceptance (Garrote et al., 2017), particularly in early childhood, since this is proven to be a crucial period for the formation of attitudes towards peers with disabilities (Killen & Rutland, 2011).

### 4.3. Limitations

In addition to the limitations found throughout the studies selected, this present review study has its own limitations. The first limitation lies within the description of learning disability in the inclusion criteria. The label 'learning disabilities' is a widely used term that references a vastly heterogeneous group of students. In order to limit the results covered by the review to students with an intellectual disability only, an additional criterion was included. The additional requirement that learning disability was specified by the authors may have led to the exclusion of potentially relevant studies from this review.

Secondly, a meta-analysis of the synthesized data was not performed. Although a meta-analysis could have provided a further understanding of the statistical relevance of the information acquired due to the strict guidelines that must be met in order to properly execute a meta-analysis, this would have further downsized the number of articles that could have been included in this review. Although it would have led to a more homogeneous selection of studies, it would also have limited the number of included articles further. It was therefore decided that the research questions posed in this review could be best answered by a thorough synthesis of the existing scientific literature and a marginally broader formulation of inclusion and exclusion criteria.

### 4.4. Future research on students' self-concept

This systematic literature review was initially conducted to answer several research questions. Although the current study has answered these research questions, it also highlighted continuing challenges in existing research and evoked new questions for future research. Although some of the challenges are by no means new, they could be classified as persistent, since they are still present in current research. In order to take the next steps in future research, it is worthwhile to elaborate and reflect on some of these challenges, with some of them already briefly introduced earlier in the discussion.

Firstly, the interpretation of existing literature is greatly hindered by the omission of vital information needed to come to correct and more generalizing conclusions. This is an issue not strictly related to self-concept research, however, it does occur as frequently in self-concept research as it does in other fields. Often researched constructs (e.g., self-concept) or target groups (e.g., students with disabilities) are not clearly defined, operationalized or distinctive characteristics of the students are not reported. Without this, it is difficult to interpret or generalize findings and come to a scientific consensus through substantiated conclusions because individual studies are mutually not comparable to one another. As mentioned earlier, in particular the operationalization of the definition of self-concept should be included in studies in order to differentiate between similar constructs, such as self-esteem. To ensure just comparisons between students with disabilities, studies should aim to be as thorough as possible in providing detailed descriptions of their populations. Although necessary, this also poses some related difficulties in and of itself upon which should be reflected. The heterogeneity of students with ID and SEBD is well known, but another complication is the just transition toward a needs-based approach instead of the medical approach in different fields, such as education. Historically, the medical approach with a prime focus on diagnoses was used to label students with disabilities. The needs-based approach works under the assumption that the needs of students are more important than any label. Subsequently, many educational settings do no longer use DSM classifications (Garner, 2009). Though possibly more challenging, it does enhance the need for researchers to describe the characteristics of the student population included in their study as transparent as possible.

Secondly, research on self-concept is currently working under the assumption that the development of the self-concept of students with a disability transpires equally to students without a disability. However, there are few studies known to the authors that investigated this (e.g., Glenn & Cunningham, 2001; Zweers et al., 2020) and the results do not all support this hypothesis. This means that it is uncertain whether or not results found in a student population with ID or SEBD are directly comparable to the known developmental trajectory of self-concept in a normative sample. It is not entirely clear either if the development of self-concept differs between students with different special educational needs, such as students with ID or SEBD. In order to gain a greater understanding of the development of self-concept in students with ID or SEBD, more longitudinal research is needed. Longitudinal research would greatly benefit and advance the scientific knowledge of the self-concept of students with ID or SEBD and is instrumental in the interpretation of scientific findings.

Thirdly, there are some methodological advancements to be made. This systematic review highlighted the importance of disclosing all found results and reporting the context in which these results have been found. This applies especially when it comes to reporting correlations and effect sizes. When correlations are concerned, it is important not only to know whether there is a correlation, but also the strength of the correlations found. In addition, the validity of the used instruments should be mentioned, since a strong correlation found using an invalid instrument cannot lead to the same conclusions as to when an instrument was used with high validity. Furthermore, without the context of effect sizes, correlation findings are not always nuanced and are sometimes difficult to interpret or might even lead to incorrect conclusions. Effect sizes are independent of group size, which is essential in research including students with disabilities since the group sizes are often small. Standard practice should be to complement correlations with effect sizes. Only

then true comparisons can be made between studies themselves.

Finally, and in addition to the third recommendation, there is a greater need to not only study linear relationships (i.e., correlations) between different variables and self-concept, but to look beyond linear correlations and to focus on variables that have an actual effect on self-concept. One way of conducting this type of research is employing a cross-lagged approach. Cross-lagged panel analysis looks at directional influences between variables over time (Allen, 2017), giving a clear indication of which variables at what time-point are causing an effect on self-concept. This knowledge could then be utilized to employ interventions at the right time, aimed and tailored directly to influence specific factors that are related to self-concept.

### *4.5. The I of students with ID or SEBD in school settings*

Since the ratification of the Salamanca Statement more than twenty-five years ago, there have been many educational changes made in order to facilitate education for students with disabilities. This review has attempted to capture the impact of those changes on the self-concept of students with ID or SEBD. For the first time, both students with ID and students with SEBD were included in such a review. Research over the last 20 years indicates that the self-concept of students with ID or SEBD overall is not distinctively negative, but rather neutral. Although the results suggest that mainstream education does not (yet) yield the desired positive effects on the self-concept of students with ID or SEBD, due to the persistent prevalence of insufficient operationalisations, methodological issues and gaps in scientific knowledge, no conclusive conclusions can be drawn. This review has attempted to offer some recommendations to eliminate these obstacles for future research. Following these recommendations, future research should focus on the relationship of the school setting on the self-concept of students with ID and SEBD, in order to fully understand which (inclusive) educational context proves to be the best fit for the I across school settings.

## CRediT author statement

Ivonne Douma: Conceptualization, Methodology, Investigation, Validation, Data curation, Formal analysis, Writing – original draft, preparation, and Writing – review & editing. Anke de Boer: Conceptualization, Methodology, Validation, Writing – review & editing, Alexander Minnaert: Conceptualization, Methodology, Writing – review & editing, Hans Grietens: Conceptualization, Methodology.

## Appendix

**Table A.1**
PICO model of used search terms

| | Inclusion criteria | Search |
|---|---|---|
| **P**erson | Students with an intellectual disability or students with social, emotional and behavioural difficulties | Disability* OR disabled OR disorder* OR behav* problem* OR behav* disorder* OR intellectual* problem* OR intellectual* disabilit* OR development* disabilit*OR cognitive disabilit* OR impairment OR learn* problem* OR developmental dis* OR 'mental* retard* OR ADHD OR attention deficit hyperactivity disorder OR ASD OR autism OR autism spectrum disorder OR conduct OR aggress* OR antisocial OR special need* OR special education* need* OR SEN OR internal* problem* OR external* problem* OR social emotional problem* OR social problem* OR emotional problem* OR affective problem* OR affective disorder* OR mental health or mental illness or mental disorder or psych* illness OR psych* dis* OR anxiety OR fear* OR withdraw* OR depress* |
| **I**ntervention | Research conducted in an educational setting | Mainstream OR inclusive education OR inclusive school* OR regular education OR general education OR inclusion OR special education OR special school* OR special need* education OR special class* |
| **O**utcomes | Self-concept | Self-concept OR self-esteem OR self-worth OR self-perception OR self-image OR perce* competen* OR self competen* |

*Note:* *truncation has been used.

**Table A.2**
Classification of effect sizes Cohen's d

| Effect size Cohen's *d* | Interpretation |
|---|---|
| ≤ −.20 | Adverse effect |
| -.19–.19 | No effect |
| .20–.49 | Small effect |
| .50–.79 | Moderate effect |
| ≥.80 | Large effect |

*Note:* based on Cohen (1992).

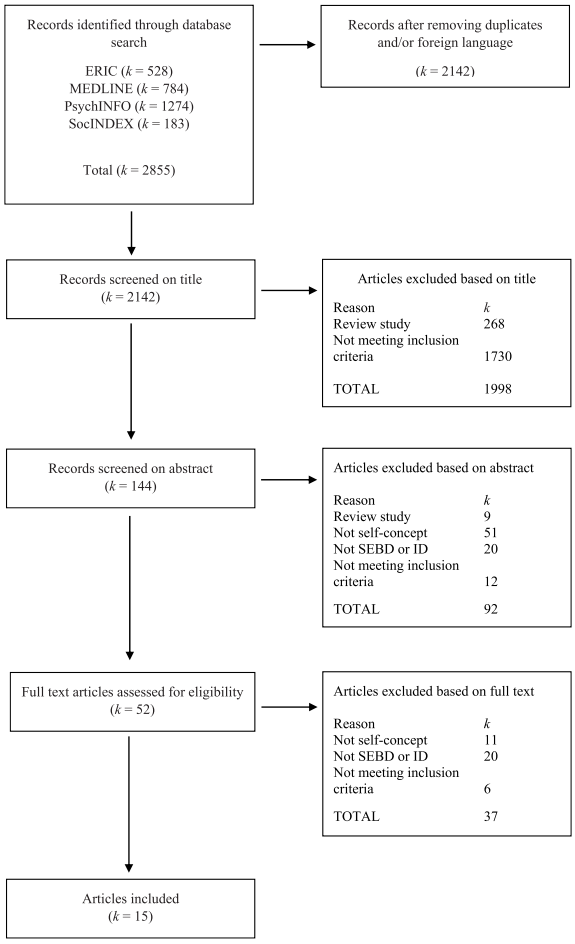



**Fig. A.1.** Results of literature search based on the PRISMA statement (Moher et al., 2009).

## References


Aarts, S., Van Den Akker, M., & Winkens, B. (2014). The importance of effect sizes. *The European Journal of General Practice, 20*(1), 61–64. https://doi.org/10.3109/13814788.2013.818655

Algozzine, B. (2017). Toward an acceptable definition of emotional disturbance: Waiting for the change. *Behavioral Disorders, 42*(3), 136–144. https://doi.org/10.1177/0198742917702117

Allen, M. (2017). *Cross-lagged panel analysis*. The SAGE Encyclopedia of Communication Research Methods. https://doi.org/10.4135/9781483381411.N117

Allport, G. W. (1954). *The nature of prejudice*. Perseus Publishing.

Avramidis, E. (2013). Self-concept, social position and social participation of pupils with SEN in mainstream primary schools. *Research Papers in Education, 28*(4), 421–442. https://doi.org/10.1080/02671522.2012.673006

Avramidis, E., Avgeri, G., & Strogilos, V. (2018). Social participation and friendship quality of students with special educational needs in regular Greek primary schools. *European Journal of Special Needs Education, 33*(2), 221–234. https://doi.org/10.1080/08856257.2018.1424779

Avramidis, E., & Norwich, B. (2002). Teachers' attitudes towards integration/inclusion: A review of the literature. *European Journal of Special Needs Education, 17*(2), 129–147. https://doi.org/10.1080/08856250210129056

Bear, G. G., Juvonen, J., & Mcinerney, F. (1993). Self-perceptions and peer relations of boys with and boys without learning disabilities in an integrated setting: A longitudinal study. *Learning Disability Quarterly, 16*(2), 127–136. https://doi.org/10.2307/1511135

Bear, G. G., Minke, K. M., & Manning, M. A. (2002). Self-concept of students with learning disabilities: A meta-analysis. *School Psychology Review, 31*(3), 405–427. https://doi.org/10.1080/02796015.2002.12086165

Bossaert, G., Colpin, H., Pijl, S. J., & Petry, K. (2013). Truly included? A literature study focusing on the social dimension of inclusion in education. *International Journal of Inclusive Education, 17*(1), 60–79. https://doi.org/10.1080/13603116.2011.580464

Bottrell, D., & Goodwin, S. (2011). *Schools, communities and social inclusion*. Palgrave Macmillan.

Bressoux, P., & Pansu, P. (2015). Pupils' self-perceptions: The role of teachers' judgment controlling for big-fish-little-pond effect. *European Journal of Psychology of Education, 31*(3), 341–357. https://doi.org/10.1007/S10212-015-0264-7

Bukowski, W. M., & Raufelder, D. (2018). Peers and the self. In W. M. Bukowski, B. Laursen, & K. H. Rubin (Eds.), *Handbook of peer interactions, relationships, and groups* (pp. 141–156). The Guilford Press.

Bussing, R., Zima, B. T., & Perwien, A. R. (2000). Self-esteem in special education children with ADHD: Relationship to disorder characteristics and medication use. *Journal of the American Academy of Child & Adolescent Psychiatry, 39*(10), 1260–1269. https://doi.org/10.1097/00004583-200010000-00013

Butler, R. J., & Gasson, S. L. (2005). Self esteem/self concept scales for children and adolescents: A review. *Child and Adolescent Mental Health, 10*(4), 190–201. https://doi.org/10.1111/j.1475-3588.2005.00368.x
Byrne, B. M. (1996). *Measuring self-concept across the life span: Issues and instrumentation*. American Psychological Association. https://doi.org/10.1037/10197-000
Cambra, C., & Silvestre, N. (2003). Students with special educational needs in the inclusive classroom: Social integration and self-concept. *European Journal of Special Needs Education, 18*(2), 197–208. https://doi.org/10.1080/0885625032000078989
Chapman, J. W. (1988). Learning disabled Children's self-concepts. *Review of Educational Research, 58*(3), 347–371. https://doi.org/10.3102/00346543058003347
Chisolm, T. R. (2015). Comparing measure of academic progress (MAP) and Piers-Harris 2 scores of students with emotional and behavioral disorders. *Journal of the American Academy of Special Education Professionals*, 21–37.
Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates, Publishers.
Cohen, J. (1992). Statistical power analysis. *Current Directions in Psychological Science, 1*(3), 98–101. https://doi.org/10.1111/1467-8721.ep10768783
Conley, T. D., Ghavami, N., VonOhlen, J., & Foulkes, P. (2007). General and domain-specific self-esteem among regular education and special education students. *Journal of Applied Social Psychology, 37*(4), 775–789. http://10.0.4.87/j.1559-1816.2007.00185.x.
Cooley, C. H. (1902). *Human nature and the social order*. Schribners's.
Crabtree, J., & Rutland, A. (2001). Self-evaluation and social comparison amongst adolescents with learning difficulties. *Journal of Community & Applied Social Psychology, 11*(5), 347–359. https://doi.org/10.1002/casp.634
Crain, R. M. (1996). The influence of age, race, and gender on child and adolescent multidimensional self-concept. In B. A. Bracken (Ed.), *Handbook of self-concept: Developmental, social, and clinical considerations* (pp. 395–420). John Wiley & Sons.
Cunningham, C., & Glenn, S. (2004). Self-awareness in young adults with down syndrome: Awareness of down syndrome and disability. *International Journal of Disability, Development and Education, 51*(4), 335–361.
Department for Education. (2018). *Special educational needs in England 2018*. https://www.gov.uk/government/statistics/special-educational-needs-in-england-january-2017.
Elbaum, B. (2002). The self-concept of students with learning disabilities: A meta-analysis of comparisons across different placements. *Learning Disabilities Research & Practice, 17*(4), 216–226.
Epstein, S. (1973). The self-concept revisited: Or a theory of a theory. *American Psychologist, 28*(5), 404–416. https://doi.org/10.1037/h0034679
Eriksson, L., & Granlund, M. (2004). Conceptions of participation in students with disabilities and persons in their close environment. *Journal of Developmental and Physical Disabilities, 16*(3), 229–245. https://doi.org/10.1023/B:JODD.0000032299.31588.fd
Feng, L., & Sass, T. R. (2013). What makes special-education teachers special? Teacher training and achievement of students with disabilities. *Economics of Education Review, 36*, 122–134. https://doi.org/10.1016/j.econedurev.2013.06.006
Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7*(2), 117–140. https://doi.org/10.1177/001872675400700202
Garner, P. (2009). *Special educational needs: The key concepts*. London: Routledge. https://doi.org/10.4324/9780203088494
Garrote, A., Sermier Dessemontet, R., & Moser Opitz, E. (2017). Facilitating the social participation of pupils with special educational needs in mainstream schools: A review of school-based interventions. *Educational Research Review, 20*, 12–23. https://doi.org/10.1016/j.edurev.2016.11.001
Glenn, S., & Cunningham, C. (2001). Evaluation of self by young people with down syndrome. *International Journal of Disability, Development and Education, 48*(2), 163–177. https://doi.org/10.1080/10349120120053649
Graham, L. J., Medhurst, M., Malaquias, C., Tancredi, H., de Bruin, C., Gillett-Swan, J., Poed, S., Spandagou, I., Carrington, S., & Cologon, K. (2020). Beyond Salamanca: a citation analysis of the CRPD/GC4 relative to the Salamanca statement in inclusive and special education research. *International Journal of Inclusive Education, 1–23*. https://doi.org/10.1080/13603116.2020.1831627
Gresham, F. M., & MacMillan, D. L. (1997). Social competence and affective characteristics of students with mild disabilities. *Review of Educational Research, 67*(4), 377–415. https://doi.org/10.3102/00346543067004377
Guay, F., Marsh, H. W., & Boivin, M. (2003). Academic self-concept and academic achievement: Developmental perspectives on their causal ordering. *Journal of Educational Psychology, 95*(1), 124–136. https://doi.org/10.1037/0022-0663.95.1.124
Gupta, D., & Thapliyal, G. (2015). A study of prosocial behaviour and self concept of adolescents. *Journal of Educational Psychology, 9*(1), 38–45. https://doi.org/10.26634/jpsy.9.1.3524
Harter, S. (1983). Development perspectives on the self-system. In P. H. Mussen (Ed.), *Handbook of child psychology: Socialization, personality and social development* (4th ed., pp. 275–385). New York: Wiley.
Harter, S. (1993). Causes and consequences of low self-esteem in children and adolescents. In R. F. Baumeister (Ed.), *Self-Esteem: The puzzle of low self-regard* (pp. 87–116). New York: Plenum Press. https://doi.org/10.1007/978-1-4684-8956-9_5.
Harter, S. (2012). *The construction of the self: Developmental and sociocultural foundations*. Guilford Press.
Hernández-Torrano, D., Somerton, M., & Helmer, J. (2020). Mapping research on inclusive education since Salamanca statement: a bibliometric review of the literature over 25 years. *International Journal of Inclusive Education*. https://doi.org/10.1080/13603116.2020.1747555
Hornby, G., & Evans, B. (2013). Including students with significant social, emotional and behavioral difficulties in mainstream school settings. In P. Garner, J. M. Kauffman, & J. Elliott (Eds.), *The SAGE handbook of emotional and behavioral difficulties* (2nd ed., pp. 335–348). Sage Publications. https://doi.org/10.4135/9781446247525.n24.
Hoza, B., Pelham, W. E., Jr., Dobbs, J., Owens, J. S., & Pillow, D. R. (2002). Do boys with attention-deficit/hyperactivity disorder have positive illusory self-concepts? *Journal of Abnormal Psychology, 111*(2), 268–278. https://doi.org/10.1037/0021-843X.111.2.268
Hoza, B., Pelham, W. E., Milich, R., Pillow, D., & McBride, K. (1993). The self-perceptions and attributions of attention deficit hyperactivity disordered and nonreferred boys. *Journal of Abnormal Child Psychology, 21*(3), 271–286. https://doi.org/10.1007/BF00917535
IDEA. (2004). *Individuals with disabilities education improvement act of 2004, 20* p. 1400). U.S.C..
James, W. (1890). *The principles of psychology*. Holt. https://doi.org/10.1037/11059-000
Kauffman, J. M., & Landrum, T. J. (2017). *Characteristics of emotional and behavioral disorders of children and youth* (11th ed.). Pearson.
Killen, M., & Rutland, A. (2011). Children and social exclusion: Morality, prejudice, and group identity. In *Children and social exclusion: Morality, prejudice, and group identity*. Wiley-Blackwell. https://doi.org/10.1002/9781444396317.
Knickenberg, M., Zurbriggen C, L. A., Venetz, M., Schwab, S., & Gebhardt, M. (2020). Assessing dimensions of inclusion from students' perspective–measurement invariance across students with learning disabilities in different educational settings. *European Journal of Special Needs Education, 35*(3), 287–302. https://doi.org/10.1080/08856257.2019.1646958
Koster, M., Nakken, H., Pijl, S. J., & Van Houten, E. (2009). Being part of the peer group: A literature study focusing on the social dimension of inclusion in education. *International Journal of Inclusive Education, 13*(2), 117–140. https://doi.org/10.1080/13603110701284680
Koster, M., Pijl, S. J., Nakken, H., & Van Houten, E. (2010). Social participation of students with special needs in regular primary education in The Netherlands. *International Journal of Disability, Development and Education, 57*(1), 59–75. https://doi.org/10.1080/10349120903537905
Krämer, S., Möller, J., & Zimmermann, F. (2021). Inclusive education of students with general learning difficulties: A meta-analysis. *Review of Educational Research, 91*(3), 432–478. https://doi.org/10.3102/0034654321998072
LaBarbera, R. (2008). Perceived social support and self-esteem in adolescents with learning disabilities at a private school. *Learning Disabilities: A Contemporary Journal, 6*, 33–44.
Leary, M. R., & Tangney, J. P. (2012). The self as an organizing construct in the behavioral and social sciences. In M. R. Leary, & J. P. Tangney (Eds.), *Handbook of self and identity* (2nd ed., pp. 1–18). The Guilford Press.
Lee, E. J., & Stone, S. I. (2012). Co-occurring internalizing and externalizing behavioral problems: The mediating effect of negative self-concept. *Journal of Youth and Adolescence, 41*(6), 717–731. https://doi.org/10.1007/s10964-011-9700-4
Lenhard, W., & Lenhard, A. (2016). *Calculation of effect sizes*. Psychometrica. http://www.psychometrica.de/effect_size.htlm.
Locke, J. (1894). *An essay concerning human understanding, 1*. Clarendon Press.

Maïano, C., Coutu, S., Morin, A. J. S., Tracey, D., Lepage, G., & Moullec, G. (2019). Self-concept research with school-aged youth with intellectual disabilities: A systematic review. *Journal of Applied Research in Intellectual Disabilities, 32*(2), 238–255. https://doi.org/10.1111/jar.12543

Marsh, H. W. (1987). The big-fish-little-pond effect on academic self-concept. *Journal of Educational Psychology, 79*(3), 280–295. https://doi.org/10.1037/0022-0663.79.3.280

Marsh, H. W. (1990). A multidimensional, hierarchical model of self-concept: Theoretical and empirical justification. *Educational Psychology Review, 2*(2), 77–172. https://doi.org/10.1007/BF01322177

Marsh, H. W., & Craven, R. G. (2002). The pivotal role of frames of reference in academic self-concept formation: The big-fish-little-pond effect. In F. Pajares, & T. Urdan (Eds.), *Adolescence and education, II* pp. 83–123). Information Age.

Marsh, H. W., & Hattie, J. (1996). Theoretical perspectives on the structure of self-concept. In B. A. Bracken (Ed.), *Handbook of self-concept: Developmental, social, and clinical considerations* (pp. 38–90). New York: John Wiley & Sons.

Marsh, H. W., & Parker, J. W. (1984). Determinants of student self-concept: Is it better to be a relatively large fish in a small pond even if you don't learn to swim as well? *Journal of Personality and Social Psychology, 47*(1), 213–231. https://doi.org/10.1037/0022-3514.47.1.213

Marsh, H. W., & Shavelson, R. (1985). Self-Concept: Its Multifaceted, Hierarchical Structure. *Educational Psychologist, 20*(3), 107–123. https://doi.org/10.1207/s15326985ep2003_1

McCauley, J. B., Zajic, M. C., Oswald, T. M., Swain-Lerro, L. E., McIntyre, N. C., Harris, M. A., Trzesniewski, K., Mundy, P. C., & Solomon, M. (2018). Brief report: Investigating relations between self-concept and performance in reading and math for school-aged children and adolescents with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 48*(5), 1825–1832. https://doi.org/10.1007/s10803-017-3403-y

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *PLoS Medicine, 6*(7), Article e1000097. https://doi.org/10.1371/journal.pmed.1000097

Nader-Grosbois, N. (2014). Self-perception, self-regulation and metacognition in adolescents with intellectual disability. *Research in Developmental Disabilities, 35*(6), 1334–1348. https://doi.org/10.1016/j.ridd.2014.03.033

National Center for Education Statistics. (2020). *The condition of education*. https://nces.ed.gov/programs/coe/indicator_cgg.asp.

O'Byrne, C., & Muldoon, O. (2017). Stigma, self-perception and social comparisons in young people with an intellectual disability. *Irish Educational Studies, 36*(3), 307–322. https://doi.org/10.1080/03323315.2017.1327363

Pijl, S. J., & Frostad, P. (2010). Peer acceptance and self-concept of students with disabilities in regular education. *European Journal of Special Needs Education, 25*(1), 93–105. https://doi.org/10.1080/08856250903450947

Pijl, S. J., Frostad, P., & Flem, A. (2008). The social position of pupils with special needs in regular schools. *Scandinavian Journal of Educational Research, 52*(4), 387–405. https://doi.org/10.1080/00313830802184558

Pijl, S. J., Skaalvik, E. M., & Skaalvik, S. (2010). Students with special needs and the composition of their peer group. *Irish Educational Studies, 29*(1), 57–70.

Russell, L., Bornholt, L., & Ouvrier, R. (2002). Brief cognitive screening and self concepts for children with low intellectual functioning. *British Journal of Clinical Psychology, 41*(1), 93–104. https://doi.org/10.1348/014466502163831

Sacks, G., & Kern, L. (2008). A comparison of quality of life variables for students with emotional and behavioral disorders and students without disabilities. *Journal of Behavioral Education, 17*(1), 111–127. https://doi.org/10.1007/s10864-007-9052-z

Scanlon, G., McEnteggart, C., & Barnes-Holmes, Y. (2019). The academic and social profiles of pupils with attention deficit hyperactivity disorder and mild general learning disability in mainstream education in the republic of ireland. *Journal of Research in Special Educational Needs, 19*(4), 344–352. https://doi.org/10.1111/1471-3802.12453

Schwabe, F., Korthals, R., & Schils, T. (2019). Positive social relationships with peers and teachers as moderators of the Big-Fish-Little-Pond Effect. *Learning and Individual Differences, 70*, 21–29. https://doi.org/10.1016/J.LINDIF.2018.12.006

Shavelson, R. J., Hubner, J. J., & Stanton, G. C. (1976). Self-concept: Validation of construct interpretations. *Review of Educational Research, 46*(3), 407–441. https://doi.org/10.2307/1170010

Spencer, T. D. (2013). Self-contained classroom. In F. R. Volkmar (Ed.), *Encyclopedia of autism spectrum disorders* (pp. 2721–2722). Springer New York. https://doi.org/10.1007/978-1-4419-1698-3_84.

Sullivan, G. M., & Feinn, R. (2012). Using effect size-or why the p value is not enough. *Journal of Graduate Medical Education, 4*(3), 279–282. https://doi.org/10.4300/JGME-D-12-00156.1

Swanson, H. L., Harris, K. R., & Graham, S. (2013). In H. L. Swanson, K. R. Harris, & S. Graham (Eds.), *Second ediHandbook of learning disabilities*. The Guilford Press. https://doi.org/10.1097/00004583-200405000-00018.

Sze, S., & Valentin, S. (2007). Self-concept and children with disabilities. *Education, 127*(4), 552–558.

Szumski, G., & Karwowski, M. (2015). Emotional and social integration and the big-fish-little-pond effect among students with and without disabilities. *Learning and Individual Differences, 43*, 63–74. https://doi.org/10.1016/j.lindif.2015.08.037

UNESCO. (1994). *The Salamanca statement and framework for action on special needs education*. Paris: UNESCO.

United Nations. (2006). *Convention on the rights of persons with disabilities*. New York, NY: United Nations.

United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development*. New York, NY: United Nations.

Valentine, J. C., DuBois, D. L., & Cooper, H. (2004). The relation between self-beliefs and academic achievement: a meta-analytic review. *Educational Psychologist, 39*(2), 111–133. https://doi.org/10.1207/s15326985ep3902_3

Van Mieghem, A., Verschueren, K., Petry, K., & Struyf, E. (2020). An analysis of research on inclusive education: a systematic search and meta review. *International Journal of Inclusive Education, 24*(6), 675–689. https://doi.org/10.1080/13603116.2018.1482012

Wei, X., & Marder, C. (2012). Self-concept development of students with disabilities: Disability category, gender, and racial differences from early elementary to high school. *Remedial and Special Education, 33*(4), 247–257. https://doi.org/10.1177/0741932510394872

Yauman, B. E. (1980). Special education placement and the self-concepts of elementary-school age children. *Learning Disability Quarterly, 3*(3), 30–35. https://doi.org/10.2307/1510628

Ybrandt, H. (2008). The relation between self-concept and social functioning in adolescence. *Journal of Adolescence, 31*(1), 1–16. https://doi.org/10.1016/j.adolescence.2007.03.004

Zeleke, S. (2004). Self-concepts of students with learning disabilities and their normally achieving peers: A review. *European Journal of Special Needs Education, 19*(2), 145–170. https://doi.org/10.1080/08856250410001678469

Zweers, I., van de Schoot, R. A. G. J., Tick, N. T., Depaoli, S., Clifton, J. P., Orobio de Castro, B., & Bijstra, J. O. (2020). Social–emotional development of students with social–emotional and behavioral difficulties in inclusive regular and exclusive special education. *International Journal of Behavioral Development, 45*(1), 59–68. https://doi.org/10.1177/0165025420915527