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The role of evidence in developing effective educational inclusion

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The role of evidence in developing effective educational inclusion

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Editorial: The role of evidence in developing effective educational inclusion

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Editorial on the Research Topic
The role of evidence in developing effective educational inclusion

Goldacre (2013) somewhat provocatively laid down the claim that education lags behind other disciplines in terms of its use of research evidence. Given Schon's (1983) critique of technical rationalism across the professions, whether Goldacre's claim is true or not remains open to question, but nevertheless the question of how education is anchored to evidence is very much on the agenda. A range of policy initiatives internationally have focused on how schools and teachers can be supported to engage with research evidence, such as the What Works Clearing House initiative (NCEE, n.d.).

The issue of evidence and practice is thrown in to particular relief in the context of inclusive approaches to special educational needs, given the prevalence of "psychoeducational" models of thinking about diagnostic categories such as autism or ADHD (Mintz and Wyse, 2015). As we noted in the call for this Research Topic, tensions between differing conceptualisations of difference and the role of categorization present questions as yet not fully answered as to the ways in which evidence can and should articulate with practice in this specific domain. Such debates specifically about inclusion and special education intercalate, of course, with wider debates about the place of evidence in education. Notably, Biesta (2017) critiques the now ubiquitous model of "What Works" as being fatally over instrumental in approach, devaluing the crucial place of "practical expertise" in the life of the school and the teacher. Yet science, in its widest sense, continues to churn out academic study after academic study—piles indeed of evidence accumulating every day of the year. From basic science on genetics and neurology through cognitive studies and research on pedagogy and critical perspectives, the march of knowledge continues. It is hard to just ignore. Yet what its precise implications are for teachers, in terms of significance and application remain difficult to ascertain.

In this Research Topic, Daniels et al. focusing on school exclusion, consider these debates and in particular the extent to which a focus on categorizations of research rigor that give precedence to RCT designs in particular fully allow us to capture the complexity the cultural-historical origins and inter play of factors in such phenomena in education. Waitoller et al. similarly problematize the emphasis on quantitative methods in research in inclusive education, particularly noting the importance of taking account of the intersections between disability, race and class. Norwich takes this line of inquiry in a somewhat different direction, noting the importance of recognizing and taking account of value tensions when

coming to judgements about both what is inclusive education and what might constitute "effective" research on inclusive education. He argues that research about inclusive education is not just empirical, it also involves value and norm clarification, a process which has been too often ignored.

Another important issue in this space is that of access. Given the constraints on teachers' time, both during pre-service education (in most countries), and when properly in the classroom as serving teachers, the question of how teachers might filter and engage with evidence is a live one. Despite the range of initiatives which have sought to address this, such as the research schools network in England (Dixon et al., 2020) and knowledge networks in Canada (Cooper et al., 2017), the question persists: how to get busy and often over worked teachers to effectively engage with any research evidence? Brown et al. report on a survey of teachers and school leaders in England about research informed inclusive practices. One key finding was that perceiving research-use as an activity that successful teachers and schools engage in is associated with more individual-level research use. Also dealing with how research evidence can be matched to meet the needs of individual teachers and schools, Mintz and Roberts focusing on autism education, propose how more use of locally tailored *Theory of Change* models during the adoption of evidence based practices in schools, could make such adoption more effective.

The Research Topic also includes empirical studies reporting directly on and adding to the evidence base on inclusive education. Sharma et al. report on the validation of the newly developed *Parental Perception of Inclusion Climate Scale* which focuses on giving more voice to parents in considering the impact of inclusive approaches to children with disabilities in schools. Staden-Payne and Nel using an interesting approach involving semi-structured interviews and collage making activities, consider factors impeding teacher self-efficacy for inclusion in South African schools. Focusing on the crucial initial stages of teacher preparation and the first few years in the classroom, Specht et al. report on a 4 year longitudinal study of the trajectory of development of inclusive beliefs. A key finding was that student teachers who had in school practicum experiences early on in their programmes were more likely to endorse inclusive beliefs.

The Research Topic concludes with two reviews of the literature. Hassani and Schwab undertake a systematic review of an area never too far from controversy in methodological debates in inclusive education, namely socio-emotional learning (SEL) interventions. Their review focuses innovatively on the use of SEL interventions with children with special educational needs, and notwithstanding positions taken in other papers in the Research Topic, criteria included use of a control group with pre and post test outcome measures. The authors conclude that across the studies there was some evidence of positive effects for SEL interventions, but that effect sizes were small. Finally, Paul et al. perhaps turning the critiques of Biesta and others on their head, present a meta-aggregative review of *qualitative* studies on the perspectives of children and young people with special educational needs and disabilities on their experiences of inclusive education. Their key finding was that young people, when provided with the right opportunities, can show profound understanding of their own strengths and needs which can inform inclusive educational practice.

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References

Biesta, G. (2017). Education, measurement and the professions: Reclaiming a space for democratic professionality in education. *Educ. Philos. Theory* 49, 315–330. doi: 10.1080/00131857.2015.1048665

Cooper, A., Klinger, D. A., and McAdie, P. (2017). What do teachers need? An exploration of evidence-informed practice for classroom assessment in Ontario. *Educ. Res.* 59, 190–208. doi: 10.1080/00131881.2017.1310392

Dixon, M., Brookes, J., and Siddle, J. (2020). "Hearts and minds: The Research Schools Network: from evidence to engagement," in *Getting Evidence Into Education, eds.* M. Dixon, J. Brookes, J. Siddle. London: Routledge, 53–68.

Goldacre, B. (2013). *Building Evidence into Education.* London: Department for Education.

Mintz, J., and Wyse, D. (2015). Inclusive pedagogy and knowledge in special education: addressing the tension. *Int. J. Inclusive Educ.* 19:1161–71. doi: 10.1080/13603116.2015.1044203

NCEE (n.d.). *What Works Clearinghouse.* Available online at: https://ies.ed.gov/ncee/wwc/ (accessed June 30, 2022).

Schon, D. A. (1983). *The Reflective Practitioner: How Professionals Think in Action.* New York: Basic Books.

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SYSTEMATIC REVIEW
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Social-Emotional Learning Interventions for Students With Special Educational Needs: A Systematic Literature Review

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In the last decades, social-emotional learning interventions have been implemented in schools with the aim of fostering students' non-academic competences. Evaluations of these interventions are essential to assess their potential effects. However, effects may vary depending on students' variables. Therefore, the current systematic review had three main objectives: 1) to identify the effectiveness of social-emotional learning interventions with students with special educational needs, 2) to assess and evaluate those intervention conditions leading to effective outcomes in social-emotional competences for this population, and 3) to draw specific conclusions for the population of students with special educational needs. For this purpose, studies were retrieved from the databases Scopus, ERIC, EBSCO and JSTOR, past meta-analysis and (systematic) reviews, as well as from journal hand searches including the years 1994–2020. By applying different inclusion criteria, such as implementation site, students' age and study design, a total of eleven studies were eligible for the current systematic review. The primary findings indicate that most of the intervention studies were conducted in the United States and confirm some positive, but primarily small, effects for social-emotional learning interventions for students with special educational needs. Suggestions for future research and practice are made to contribute to the improvement of upcoming intervention studies.

Keywords: soical-emotional learning, special educational needs, systematic literature review, school-based, interventions

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INTRODUCTION

Schools often focus strongly on teaching subject-related content. However, educators and policymakers have increasingly recognized that the teaching and learning of non-academic competences also play an important role when it comes to preparing students for their life journey. In this context, it has been acknowledged that social-emotional well-being is a key factor for school belonging (Allen et al., 2018). A recent systematic review (Amholt et al., 2020) and further meta-analysis (Bücker et al., 2018; Kaya and Erdem 2021) have shown, mixed but overall small to medium effects of well-being on students' academic achievement. Well-being has also been discussed as a key factor for inclusive education (Hascher 2017; Juvonen et al., 2019). In this context, students with special educational needs (SEN) in particular were found to have reduced well-being

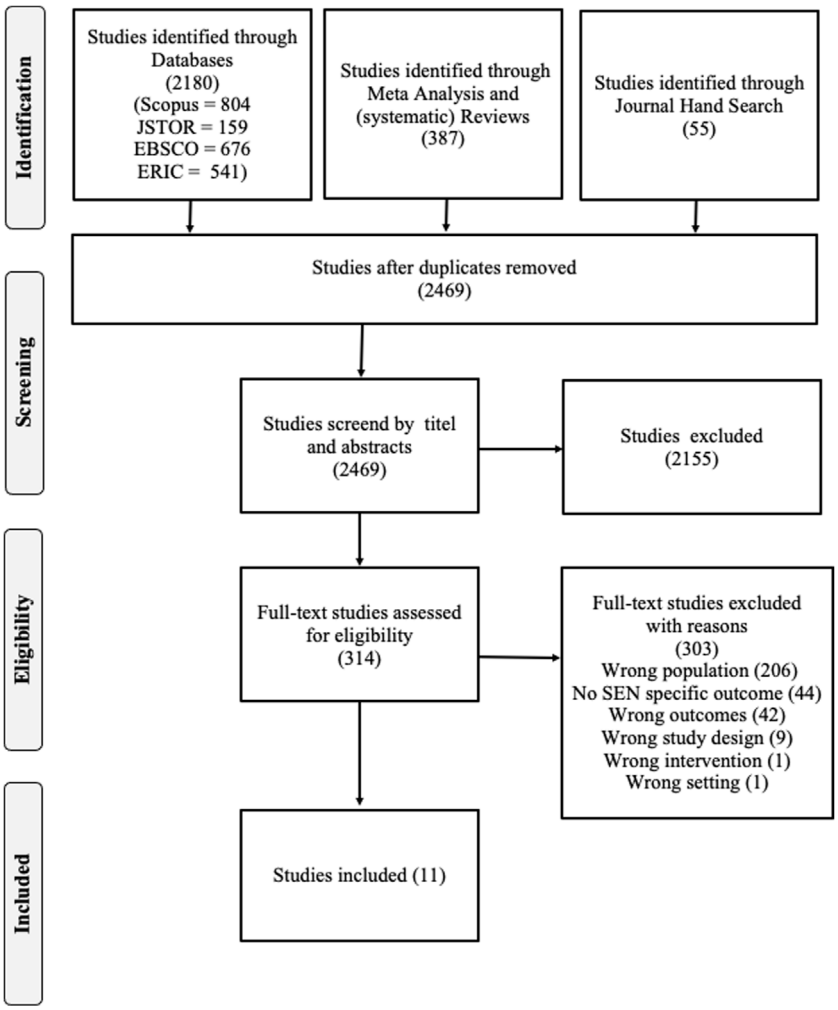

FIGURE 1 | Flow Diagram.

(McCoy and Banks 2012; Skrzypiec et al., 2016) and school belonging (Dimitrellou and Hurry 2019) relative to their peers without SEN. Students with SEN have also been reported to lack of social-emotional competences compared to their peers without SEN (Frostad and Pijl 2007). Therefore, the development in and enhancement of social-emotional competences play a crucial role in every students' life, especially in those of students with SEN. However, the concept of SEN is wide and includes students with distinct (learning) needs that are unaddressed or weakly addressed within mainstream schools and curricula. This results in cognitive, social-emotional, behavioral and/or physical needs, whether or not there is a formal diagnosis (Frederickson and Cline 2015). Yet, there is no consensus on the definition of the wide construct of SEN (Susanne, 2021) as it includes both those students with an official diagnosis (Abedi and Faltis 2015) and those scoring high (Kaptein et al., 2008; Ullebø et al., 2011; Hall et al., 2019; Bryant et al., 2020) on diagnostic instruments such as the Strengths and Difficulties Questionnaire (SDQ; Goodman 1997; Goodman, Meltzer, and Bailey 1998). In many studies, the sample of students with SEN is also not differentiated by type which may be due to the great number of comorbidities. Students with learning disabilities (LD), for instance, often exhibit ancillary behavior problems (see e.g., Susanne, 2018). Elias et al. (1997) presented teaching methods enabling students to recognize and control their emotions as well as their social interactions. Domitrovich et al. (2017) propose to divide social-emotional competences into an intra- and interpersonal domain. Accordingly, intrapersonal competences comprise self-control, emotional regulation, and coping strategies, while communication, social problem solving, and cooperation are associated with the interpersonal domain. Jones et al. (2017) point out that the former is essential to learning the latter. Social emotional learning (SEL) is thus described by the Collaborative for Academic, Social and Emotional Learning (Collaborative for Academic, Social, and Emotional Learning, 2020) as "the process through which all young people and adults acquire and apply the knowledge, skills, and attitudes to develop healthy identities, manage emotions and achieve personal and collective goals, feel and show empathy for others, establish and maintain supportive relationships, and make

responsible and caring decisions". Hence, five core competences are defined for the SEL framework: self-awareness (e.g., understanding emotions and thoughts as well as their impact on behavior), self-management (e.g., goal achievement through managing emotions, thoughts, and behavior), social awareness (e.g., empathy, recognizing social norms), relationship skills (e.g., effective communication, development of healthy relationships, helping others), and responsible decision-making (e.g., individual and social problem solving, reasoned judgment, critical thinking skills). In recent decades, several SEL intervention programs have been developed and implemented in schools. Past research has shown that these programs have positive impacts on academic success as well as non-cognitive skills. For example Corcoran's et al. (2018) meta-analyses, which included forty studies, found evidence that SEL interventions had positive effects on reading and mathematics and small effects on science. Positive outcomes on social emotional competences could be found in two meta-analyses (Durlak et al., 2011; Wigelsworth et al., 2016) and evidence of long term effects of social-emotional interventions was demonstrated by Sklad et al. (2012), including forty-five studies, and Taylor et al. (2017), including eighty-two studies, although short-term effects were more likely than long-term effects. However, Siddiqui and Ventista (2018) reported slightly more attenuated but positive results in their systematic review on the impact on non-cognitive skills, including thirteen studies.

Overall, several meta-analyses in the last decade could find at least some evidence of SEL intervention benefits on social-emotional competences. Besides individual competences Morganti et al. (2019) emphasize that SEL also plays an important role in the context of SEN and inclusive education, since students learn to recognize and understand the emotions, views, and actions of their classmates, creating an accepting learning environment. The authors highlight that SEL can foster the interaction between students with or without SEN but also predict desirable behaviors or inhibit inappropriate ones. Nonetheless, it remains important to have a closer look at whether students with SEN benefit from SEL intervention programs. Three existing reviews have been carried out on this topic. Hagarty and Morgan (2020) recently published a systematic literature review on SEL interventions for students with LD, including twelve studies. The authors included school-based as well as out-of-school interventions with children aged 4–19. The results show little evidence of the effectiveness of SEL interventions for students with LD. Play-based programs, however, showed more effects, and studies assessing the effectiveness of interventions based on behavioral psychology and social learning theory showed the greatest effect for students with LD. It has to be mentioned that the authors also included intervention studies without control groups as well as case studies. Another systematic literature review and meta-analysis focused on computer-based SEL interventions for individuals on the autistic spectrum (ASD) (Tang et al., 2019). The meta-analysis, including seventeen studies, could find medium effects of computer-based interventions targeting social-emotional outcomes. However, in this study, the participants ranged in age from 3 to 52 years, seventeen intervention studies lacked a control group, and case studies were included. Furthermore, the interventions were only computer based. A further systematic review assessed SEL interventions for students with hearing impairments (Luckner and Movahedazarhouligh 2019). The authors were very reluctant to evaluate the effectiveness of the interventions on SEL outcomes since a great number of the studies had inadequate study designs (e.g., no control group, too few participants, etc.).

Due to the aforementioned studies, it has to be stated that past research mainly examined the effects of SEL interventions for students without SEN. Few available reviews of the effects of SEL programs for students with SEN focused on interventions for individuals with ASD, LD, or hearing impairment and included studies without a control group, also conducted out-of-school (e.g., therapeutic), and included both very young and elderly people. The present systematic review therefore aims to close this gap by examining school-based SEL interventions for school-aged students with SEN.

The research questions leading this systematic review are as follows:

1. What are the effects of SEL interventions on the social-emotional competences of students with SEN?
2. Which intervention conditions (e.g., duration, implementing person, etc.) are most important SEN students' outcomes?
3. Which specific conclusions can be drawn according to the population of students with SEN?

METHODS

Search Procedure and Inclusion Criteria

This systematic literature review aligns with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Statement (Page et al., 2021). The search procedure started in May 2020 and ended in mid-July 2020. The databases Scopus, ERIC, EBSCO, and JSTOR were used to retrieve relevant studies. In advance, several systematic reviews and meta-analyses on SEL interventions were screened to identify keywords used. These keywords were then pooled and systematized. The syntax used in the databases was hence composed of three main areas, namely content, program, and study-related terms. The following syntax was, for example, applied to the Scopus database:

("social emotional" OR "social and emotional" OR "social-emotional" OR "social emotional competenc*" OR "social-emotional competenc*" OR "social and emotional competenc*" OR "social emotional learning" OR "social and emotional learning" OR "social-emotional learning" "SEL" OR "social emotional wellbeing" OR "social emotional well-being" OR "social and emotional wellbeing" "social and emotional well-being" OR "social-emotional wellbeing" OR "social-emotional well-being" OR "social competence" OR "social development" OR "social skills" OR "social-skills") AND (intervention OR "class* intervention" OR curriculum OR program* OR implementation OR "education* intervention" OR "evidence-based intervention" OR "school intervention" OR "school-based intervention*" OR "universal intervention*" OR

"school-based program*" OR "universal prevention" OR "school-wide" OR education OR prevention OR training) AND (evaluation OR effect* OR outcome* OR "program* evaluation" OR "intervention research" OR "random control" OR "random* trial" OR study OR review OR predictor*)

In addition to the databases, studies from thirteen (systematic) reviews and meta-analysis of SEL interventions were added (Merrell 2010; Durlak et al., 2011; Weare and Nind 2011; Sklad et al., 2012; Humphrey, Lendrum, and Wigelsworth 2013; Barnes, Smith, and Miller 2014; Sullivan and Simonson 2016; Wigelsworth et al., 2016; Taylor et al., 2017; Corcoran et al., 2018; Moy et al., 2018; Siddiqui and Ventista 2018; Goldberg et al., 2019). Furthermore, a hand search was completed in the following journals, as they contained a great amount of the studies included in the respective meta-analyses and/or (systematic) reviews: *Child Development*, *Developmental Psychology*, *Early Education and Development, Journal of Applied Developmental Psychology*, *Journal of Educational Psychology*, *Review of Educational Research*, *Review of Research in Education*, and *School Psychology Quarterly*.

Several inclusion criteria were defined to answer the research questions. Hence, studies had to meet the following criteria to be included in the systematic literature review:

- published in English
- published since 1994 (since the emergence of the term SEL)
- published in a scientific journal
- focus on SEL intervention
- school-based intervention
- students not older than eighteen during intervention implementation (grade 1 and above)
- empirical research (quantitative or mixed methods)
- sample size of at least ten students with SEN
- reporting outcomes on at least one SEL dimension
- reporting pre and post-test outcomes for students with SEN
- evaluated with a control group (including students with SEN)

SEL interventions were defined as those that had a curriculum and were composed of different sessions in which the promotion of social-emotional competences was addressed and implemented in the same way by teachers/other professionals. Intervention studies in which, for example, teachers were provided theoretical/practical training in SEL and/or in specific teaching techniques aiming to promote these competences without a specific intervention/curriculum were excluded from this literature review. With respect to students' age, studies were excluded if they did not provide separate data for students within the targeted age group. For example, studies were included if pre-test was in pre-school and followed data for the same sample in first grade after the intervention but excluded if data from pre-school/kindergarten intervention participants were mixed with those of school-aged participants. In terms of methodology, case studies were excluded, as were studies that applied only qualitative methods to evaluate outcomes. Studies had to report at least some descriptive statistics (mean scores and standard deviations for pre-and post-tests for both intervention and control groups) for students with SEN. For example, studies that included only partial descriptive data were included, and the corresponding author(s) was/were contacted and asked for missing data (e.g., studies applying various regression analyses). The missing data were included in the current review and marked accordingly in the reporting tables if provided by the author. If authors could not provide the missing data (e.g., older data) or did not respond, the study had to be excluded, as effect sizes (ES) could not be calculated without sufficient descriptive data. Multiple papers on the same cohort were considered if the inclusion criteria were met and additional data were reported. SEN was operationalized based on an official diagnosis or cut-off values indicated as clinical/high/at-risk on screening instruments such as the SDQ (Goodman 1997; Goodman, Meltzer, and Bailey 1998) or the Systematic Screening for Behavior Disorders tool (SSBD; Walker and Severson 1992). Studies had to report clear cut-off values to be eligible. In this sense, studies that reported, for example, students with behavioral and/or emotional difficulties based on teacher referral (without any assessment) were excluded, as were studies that reported data from "at-risk students" without any further information or assessment.

Screening, Selection, and Critical Appraisal of Selected Studies

The whole process of the current systematic literature review was conducted with the systematic review software Covidence, an online screening and data extraction tool. In the first step, records were uploaded to the tool where duplicates were automatically removed. In a second step, both authors screened study titles and abstracts independently. The online tool allows researchers to mark studies with "yes," "no," and "maybe." When both authors agreed, the respective study was either included or excluded for full-text screening. In case of a disagreement, consensus had to be reached between the authors by discussion. During the full-text screening, both authors independently excluded studies with one of the reasons specified in the inclusion criteria (e.g., no SEN specific outcome). The inclusion criteria were ranked hierarchically, and the reason for exclusion of the studies was determined accordingly. This also means that a study could have several reasons for exclusion; however, the online tool only allows the assignment of one reason. For example, the reason for excluding a study which neither included students with SEN nor had a pre- and post-test design would be "wrong population" since the inclusion criteria of students with SEN is ranked higher in the inclusion criteria than the inclusion criteria pre-post study design.

Figure 1 shows the total number of records (N = 2,622) identified through databases (n = 2,180), meta-analysis and (systematic) reviews (n = 387) as well as journal hand search (n = 55). After removing duplicates, a total of 2,469 studies remained for the title and abstract screening. After the title and abstract screening, 314 studies were eligible for full-text screening. After reviewing the full texts, eleven studies remained to be included in the literature review.

Following the full-text screening, the included studies were critically appraised using the checklist instrument for educational intervention studies proposed by Morrison et al. (1999). According to this instrument, nine key questions are put forward to critically evaluate the intervention as well as the evaluation. Topics to be assessed included research question; aims of the intervention; description of the educational context, structure, content, and process of the intervention; study design; methods; outcomes to evaluate the intervention; further explanations of results; and discussion for unanticipated outcomes.

Coding, Data Extraction, and Calculation of Effect Sizes

Coding was piloted using two of the eligible studies. To allow a good overview of the intervention and its results, two protocols were designed. The first protocol provides general information on the intervention and the study (**Table 1**): country, intervention name, intervention duration and frequency, implementer, training, school level and type, research design, mean age, sample, and type of SEN. The second protocol contains student-specific outcomes. The latter provides descriptive statistics for pre- and post-test and is subdivided into four parts: student ratings, teacher ratings, parent ratings, and assessments (**Tables 2–5**). Studies used a variety of designs leading to reported outcomes on at least one of the aforementioned subgroups to assess emotional and/or social/behavioral competences for the participating students. In the case of several measurement points during the intervention, only pre- and post-test data were extracted, as only a few studies reported (e.g., Espelage, Rose, and Polanin 2016).

Calculation of effect sizes (ES) was necessary since they were missing in some studies or reported differently across the studies. Since only evaluations with pre-post designs (repeated measurement points) that were evaluated with a control group were included, the ES d_{corr} was calculated for each study following Klauer (2014), who proposes to use the difference between the Hedge's *g* of the intervention (IG) and control group (CG). This corrected version allows for unbiased ES, especially for studies with smaller sample sizes. ESs are indicated as small (<0.5), medium (0.5–0.8), or large (>0.8) within the tables.

RESULTS

Due to the inclusion criteria a total of eleven studies (Greenberg et al., 1995; Greenberg and Kusché 1998; Conduct Problems Prevention Research Group, 1999; Lane 1999; Sandra G.; McClowry, Snow, and Tamis-LeMonda 2005; Ohl, Fox, and Mitchell 2013; Wigelsworth, Humphrey, and Lendrum 2013; Espelage, Rose, and Polanin 2016; Smith et al., 2016; Faria, Esgalhado, and Pereira 2019; Jayman et al., 2019)were found eligible for the current systematic review. This section is subdivided into two sections and reports on general information (see also **Table 1**) regarding the interventions (e.g., name of intervention, country in which it was implemented, etc.) as well as some basic information regarding the study (e.g., study design, sample size and type of SEN). The second section reports on measures and outcomes with a focus on ESs. Descriptive data for pre- and post-intervention measures are presented in **Table 2** through 5 to provide a better overview.

General Information

Publication dates reached from 1995 to 2019. Most of the program evaluations were conducted in the United States (n = 7), followed by the United Kingdom (n = 3), while one study was evaluated in Portugal. Regarding author overlap, it can be reported that this appeared in one case, comprising three studies, and in a second case, comprising two studies, where at least two authors appeared as (co)authors. In total, eight different intervention programs were evaluated, namely: Promoting Alternative THinking Strategies (PATHS) (n = 3); Pyramid Club (n = 2); Second Step-Student Success Through Prevention (SS-SSTP); Smile, Scream and Blush; Social Skills Intervention (SSI); INSIGHTS into Children's Temperament intervention (INSIGHTS), the Tools for Getting Along, and Secondary Social and Emotional Aspects of Learning (SEAL). Sessions were conducted in most of the studies at least on a weekly basis for 20–120 min, while few studies did not report any information on the frequency (n = 4). The intervention was delivered by teachers in seven of the studies and by external persons (e.g., facilitators, puppet therapists, researcher) in four studies. Training for implementation was provided in nine cases. Two studies did not provide any information in this regard; however, this concerns those interventions that were delivered by external professionals. In most of the studies (n = 7), the intervention was implemented in a primary mainstream school; two of these had regular and special classes. Seven interventions were implemented at the classroom level, two in small groups, and two at the school level. Ten studies reported a quantitative study design while one applied a mixed-method design. Students aged 6.5 to 14 in ten studies, while one study could not report neither on the mean age nor age ranges as data was not available for all students. The total sample size of the study ranged from 39 to 443, while the sample size of students with SEN ranged from 39 to 1,307. The sample size for students with SEN in the intervention group ranged from 13 to 593, and from 12 to 714 for the control group. Six studies reported data for students with Behavioral, Emotional, Social Difficulties (BESD), three studies for students with diverse SEN, one study for students with mild intellectual disabilities and one for students with hearing impairment. Four studies reported on outcomes for students with a diagnosed SEN. Seven studies included those students in their sample who scored high/clinical on screening instruments assessing behavioral and/or emotional problems.

Outcomes for Emotional, Social, Behavioral Competences

In the reviewed studies, reported outcomes were measured in the form of student ratings (n = 4), teacher ratings (n = 6), parent ratings (n = 3), and assessments (n = 4). Five studies reported outcomes from at least two different assessors for social/

TABLE 1 | General Information.

Study	Country	Intervention	Duration	Implemented by	Training	School level	School type	Level intervention applied at	Design	Age (Mean/SD)	Sample total	Sample (IG)	Sample (CG)	SEN total	SEN (IG)	SEN (CG)	Type of SEN	SEN: Rating or diagnosis
Conducted Problems Prevention Research Group (1999)	United States	PATHS (Fast Track)	120 min weekly (2–3 sessions; 22 sessions in total)/ 7 months	Teachers	yes	Primary	Mainstream	Whole school	Quantitative	6.5/0.48	891	445	446	891	445	446	BESD	SEN due to teacher and parent rating (hihg risk: top 10%)
Espelage et al. (2016)	United States	SS-SSTP	50 min/ freequency N/A/41 lessons/ 3 years	Teachers	yes	Primary to lower secondary	Mainstream	Class	Quantitative	11–12 years	123	47	76	123	47	76	Various	Diagnosed
Faria et al. (2019)	Portugal	Smile, Scream and Blush	40–45 min/ 8 sessions/ frequwncy and duration N/A	Researcher in cooperation with teachers, class directors and SEN teacher	N/A	N/A	N/A	Small groups	Quantitative	10.57 (aged 8–15)	50	21	29	50	21	29	Mild intellectual disablities	Diagnosed
Greenberg & Kusché (1998)	United States	PATHS	20–40 min daily/ 22 weeks	Teachers and teacher assistents	yes	Primary	Special class in mainstream school	Class	Quantitative	102.7 months/ 26.1	57	29	28	57	29	28	Hearing Impairment	Diagnosed
Greenberg et al. (1995)	United States	PATHS	20–30 min/ 3 times per week (60 lessons in total)/most of the school year	Teachers	yes	Primary	Special class and regular class in mainstream school	Class	Quantitative	8	286	130	156	94	47	47	Various	Diagnosed
Jayman et al. (2019)	United Kingdom	Pyramid Club	90 min/ weekly/ 10 weeks	Club leaders	yes	Lower Secondary	Mainstream	Class	Mixed	12.53/0.79	126	66	60	126	66	60	BESD	SEN due to teacher rating and multidisciplinary meetings
Lane (1999)	United States	SSI	30 min/ 4 days a week for 6 weeks (=12,5 h)	Teachers	yes	Primary	Mainstream	Small group of 13 students from 1 class	Quantitative	6.8/0.38	39	13	26	39	13	26	BESD	SEN due to teacher rating
McClowry et al. (2005)	United States	INSIGHTS	1 h/weekly for 10 weeks	Facilitators and puppet therapists	yes	Primary	Mainstream	Class	Quantitative	6.6/0.84	148	91	57	42	30	12	Various (mainly ADHD)	SEN due to parent rating
Ohl et al. (2013)	United Kingdom	Pyramid Club	90 min/ weekly/ 10 weeks	Club leaders	N/A	Primary	N/A	Class	Quantitative	7–8 years	375	102	273	64	23	41	BESD	SEN due to teacher rating (SDQ, "abnormal" band)
Smith et al. (2016)	United States	Tools for Getting Along	30 min/ frequency N/ A/26 lessons/ 3 years	Teachers	yes	Primary	N/A	Class	Quantitative	N/A	2079	N/A	N/A	approx. 369	approx. 210	approx. 159	BESD	SEN due to teacher rating (clinical or at-risk: top 20%)
Wigelsworth et al. (2013)	United Kingdom	SEAL	session duration, and frequency N/ A/2 years	Teachers and teacher assistents	yes	lower secondary	Mainstream	Whole school	Quantitative	11–12 years	4,443	2,442	2001	1,307	593	714	BESD	SEN due to self-rating (SDQ, "abnormal" band)

TABLE 2 | Student Ratings.

Study	T1 student rated	Measure	What is assesed	Subscales	n (IG)	Mean (IG)	SD (IG)	n (CG)	Mean (CG)	SD (CG)	T2 - student rated	n (IG)	Mean (IG)	SD (IG)	n (CG)	Mean (CG)	SD (CG)	Effect size: corrected d
Conducted Problems Prevention Research Group (1999)	No student ratings reported																	
Espelage et al. (2016)	Pre-intervention/ 6th Grade	Empathic Concern (EC; Davis, 1983)	Empathy and concern		47	1.11	0.15	76	1.47	0.11	Post-intervention	47	2.40	0.80	76	2.55	0.78	2.651
		Caring of Others (COO; Crick, 1996)	Caring behaviors			2.19	0.19		2.14	0.13			1.89	0.81		1.92	0.80	-0.359
Faria et al. (2019)	No student ratings reported																	
Greenberg & Kusché (1998)	No student ratings reported																	
Greenberg et al. (1995)	No student ratings reported																	
Jayman et al. (2019)	Pre-intervention/ 1st Grade	Strengths and Difficulties Questionnaire (SDQ; Goodman et al., 1998)	Socio-emotional well-being	Conduct Problems	60	1.43	1.56	61	1.38	1.52	Post-intervention	60	1.54	1.37	61	1.42	1.74	-0.02
				Hyperactivity/ Inattention		3.67	2.13		3.25	1.95			3.36	2.03		2.97	1.95	-0.01
				Emotional symptoms		4.21	2.48		2.38	1.95			3.28	2.57		2.33	2.14	-0.258
				Peer relationsip problems		3.54	2.32		1.75	1.35			2.41	1.81		1.53	1.47	-0.411
				prosocial behaviour (strength)		7.18	1.88		7.70	1.83			7.72	2.28		7.85	1.84	0.218
				Total difficulties		12.97	2.53		8.77	4.61			10.70	5.69		8.25	5.13	-0.601
Lane (1999)	No student ratings reported																	
McClowry et al. (2005)	No student ratings reported																	
Ohl et al. (2013)	No student ratings reported																	
Smith et al. (2016)	Pre-intervention	Anger Expression Scale (ASEC; Phipps and Steele 2002)	Anger control, anger-out, anger-in, trait-anger		177	67.67	5.39	145	68.71	6.54	Post-intervention/ approx 3 years after T1	177	60.67	11.87	145	62.43	10.93	0.022
		Social Problem-Solving Inventory-Revised (SPSI-	problem appraisal and problem-	Social Problem-Solving-Negative orientation	186	61.11	6.44	140	61.42	5.95		186	51.69	11.28	140	49.91	10.63	0.211

(Continued on following page)

TABLE 2 | (*Continued*) Student Ratings.

Study	T1 student rated	Measure	What is assessed	Subscales	n (IG)	Mean (IG)	SD (IG)	n (CG)	Mean (CG)	SD (CG)	T2 - student rated	n (IG)	Mean (IG)	SD (IG)	n (CG)	Mean (CG)	SD (CG)	Effect size: corrected d
		R; D'Zurilla et al., 2004)	solving skills	Social Problem-Solving-Positive orientation	187	99.46	8.85	144	100.98	9.37		187	85.04	18.24	144	90.10	16.85	-0.119
Wigelsworth et al. (2013)	Pre-intervention/ 2008	Strengths and Difficulties Questionnaire (SDQ; Goodman 1997)	Socio-emotional well-being	Conduct Problems	593	5.88	1.07	714	5.95	1.26	Post-intervention/ approx. 2 years after T1, 2010	593	3.67	1.91	714	3.97	2.09	-0.09
				Emotional symptoms		7.80	0.95		7.80	1.04			5.16	2.36		5.31	2.50	-0.062

behavioral and/or emotional competences. Seven studies reported outcomes in the social/behavioral and emotional domains, two in emotional, and two in social/behavioral competences. In total, ES (d_{corr}) for emotional, social, behavioral competences ranged from small (-0.208) to large (4.634). When comparing different reporting sources on overall ES, student ratings yielded small (0.211) to large (2.651) effects, teacher ratings showed likewise small (0.208) to large (-1.192) ES, parent ratings yielded small (-0.238) to medium (-0.571) ES, and assessments yielded small (-0.232) to large (4.634) ES. However, small ESs were much more frequent than medium to large ones, except for assessments, where this was the reversed (see **Tables 2–5**).

Overall, ES for emotional outcomes ranged from small (-0.245) to large (4.634). In student ratings ES for emotional outcomes ranged from small (-0.258) to large (2.651) in two studies while no effect on emotional outcomes could be found in two studies (anger control; emotional symptoms). In teacher ratings, ES for emotional outcomes ranged from small (-0.245) to medium (-0.936) in four studies, while in two studies two subscales on emotional outcomes (self-image, aggression) did not yield any ES. In the three studies that included parent ratings, only one assessed emotional outcomes, finding no effects. Studies using assessments to evaluate emotional competences ranged in ES from medium (0.681) to large (4.634), available in four studies. However, in one study reporting on a subscale regarding emotion coping, no effect could be found, while another subscale of this study had a large ES in emotion recognition. In a second study, however, no effects could be shown on the subscale for emotion recognition.

For the overall effects of social/behavioral outcomes, ES ranged from small (-0.208) to large (2.183). For student ratings, ESs for social/behavioral outcome, available in three studies, were small (0.211) to medium (-0.411). In one of these studies, there was no effect for the subscale positive orientation in social problem solving, and in a second study, there was no effect for two subscales on conduct problems and hyperactivity. For teacher ratings, ES ranged from small (-0.208) to large (1.502). In one of these studies, no effect could be found for one subscale assessing externalizing behavior, in a second study there was no effect regarding the subscales on conduct problems and hyperactivity, and in a third study a subscale regarding behavioral adjustment did not show an effect. For parent ratings of social/behavioral outcomes, ES ranged from small (-0.238) to medium (-0.571), while in one of these studies no effect could be shown for the externalizing behavior subscale. In one study, which included parent ratings, no effect at all could be shown either for the pro-social behavior or the externalizing behavior problems subscale. For the two studies applying assessments to evaluate social/behavioral outcomes, ES ranged from small (0.262) to large (2.183) for social problem-solving skills, while in one of these studies assessing hostile attributional bias and aggressive relation, no effects could be found.

DISCUSSION

During past decades the number of published studies has radically increased in the field of inclusive education. One the

TABLE 3 | Teacher Ratings.

Study	T1 teacher rated	Measure	What is assesed	Subscales	n (IG)	Mean (IG)	SD (IG)	n (CG)	Mean (CG)	SD (CG)	T2 teacher rated	n (IG)	Mean (IG)	SD (IG)	n (CG)	Mean (CG)	SD (CG)	Effect size: corrected d
Conducted Problems Prevention Research Group (1999)	Pre-intervention/ Kindergarten	TRF (Achenbach, 1991)	Externalizing behaviour	Externalizing (T score)	373	66.31	10.72	377	66.29	10.75	Post-Intervention/ Grade 1	373	64.55	11.07	377	64.55	10.76	-0.002
Espelage et al. (2016)	No teacher ratings reported																	
Faria et al. (2019)	No teacher ratings reported																	
Greenberg & Kusché (1998)		Meadow/Kendall Social-Emotional Assessment Inventory for Deaf Stu_x0002_dents (MKSEAI; Meadow, 1983)	behavior (factors of social functioning)	social adjusstment	29	311.0	40.0	28	326.7	49.3	Post-intervention (approx. 1 year after T1)	29	323.4	46.5	28	326.3	51.2	0.291
				Self-image		309.7	30.8		314.0	38.7			320.1	41.8		319.9	39.8	0.128
				Emotional adjustment		335.1	47.8		358.8	38.3			357	33.9		348.4	37.0	0.775
		Health Resources Inventory (HRI; Gesten, 1976)	social competency-related behaviors	Gutsy		23.3	4.0		22.5	5.8			25.0	5.0		23.3	4.7	0.189
				Peer relations		30.7	4.4		30.9	4.7			30.9	5.3		28.6	5.0	0.49
				Frustration tolerance		23.0	6.0		25.8	7.7			25.9	6.2		22.6	6.4	0.93
				Rule following		25.5	5.4		25.3	6.1			27.6	5.6		26.1	5.5	0.235
		Walker Behavior Problem Identification Checklist (WBPIC; Walker, 1976)	behavior	acting out		4.1	4.6		3.0	5.0			3.6	4.4		3.5	5.2	-0.208
				Withdrawl		1.2	2.8		0.4	1.1			0.6	1.5		0.6	1.4	-0.374
				Distractibility		3.0	2.8		2.2	2.7			2.6	2.8		2.8	2.3	-0.369
				Immaturity		0.7	1.1		0.8	1.0			1.1	1.9		1.6	1.5	-0.196
Greenberg et al. (1995)	Pre-intervention	CBCL-TRF (Achenbach, 1991)	Values missing															
Jayman et al. (2019)	Pre-intervention/ 1st Grade	Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997)	Socio-emotional well-being	Conduct Problems	66	0.88	1.26	51	0.59	1.33	Post-intervention	66	0.64	1.03	51	0.53	1.01	-0.116
				Hyperactivity/ Inattention		3.42	2.52		2.43	2.64			2.80	2.0		2.24	2.62	-0.14
				Emotional symptoms		5.03	2.58		1.29	1.55			3.09	2.35		1.39	2.01	-0.936
				Peer relationsip problems		4.67	2.33		0.98	1.21			2.73	2.40		1.18	1.74	-1.192
				prosocial behaviour (strength)		6.12	2.38		7.61	2.12			7.24	2.28		7.75	2.25	0.431
				Total difficulties		13.98	4.88		5.29	4.96			9.06	5.37		5.33	5.40	-1.075
Lane (1999)	Pre-intervention/1 Grade	Social Skills Rating System (SSRS; Gresham and Elliott 1990)	1. Social skills (cooperation, assertion, self-control) 2. problem behaviors (externalizing, internalizing, hyperactivtiy)	social competences	13	76.08	18.47	13 (CG1)	93.00	8.70	Post-intervention	13	80.38	16.82	13 (CG1)	97.77	19.43	0.215
				problem behaviors		119.38	12.07		103.31	10.67			118.15	11.45		95.46	12.59	0.475
								13 (CG2)	87.31	10.10					13 (CG2)	102.31	11.00	-0.789
									112.69	12.13						96.23	9.82	1.502
McClowry et al. (2005)	No teacher ratings reported																	
Ohl et al. (2013)	Pre-intervention	Strengths and Difficulties	Socio-emotional well-being	Total difficulties	23 ("abnormal")	32.00	11.13	41	20.72	3.31	Post intervention	23	19.0	5.67	41	12.71	6.79	-0.599[a]

(Continued on following page)

TABLE 3 | (*Continued*) Teacher Ratings.

Study	T1 teacher rated	Measure	What is assesed	Subscales	n (IG)	Mean (IG)	SD (IG)	n (CG)	Mean (CG)	SD (CG)	T2 teacher rated	n (IG)	Mean (IG)	SD (IG)	n (CG)	Mean (CG)	SD (CG)	Effect size: corrected d
		Questionnaire (SDQ; Goodman, 1997)									(12 weeks after T1)							
Smith et al. (2016)	Pre-intervention	Behavior Rating Inventory of Executive Funtion - Teacher Form (BRIEF; Gioia et al., 2002)	Management of emotions and behavior	Behavioral regulation	199	49.16	5.99	137	49.48	5.79	Post-intervention (approx. 3 years after T1)	199	45.16	10.47	137	47.50	10.36	-0.17
				Emotional regulation	210	42.19	6.39	131	42.43	6.54		210	37.37	10.60	131	40.36	10.60	-0.245
			Problem-solving skills: plan, organize, monitor problem solving	Metacognition Index	184	103.80	12.08	138	104.13	12.02		184	95.33	21.83	138	100.97	19.48	-0.243
		Clinical Assesment of Behaviour Teacher-Rating Form (CAB-T; Bracken and Keith, 2004)	Externalizing and internalizing behavior, social skills	Behavioral adjustment (sum)	200	225.02	26.70	141	225.15	24.55		200	210.27	43.44	141	219.82	43.99	-0.214
		Reactive-Proactive Aggression Scale (Dodge & Coie, 1987)	Assessment of aggression		191	19.67	3.23	159	20.21	3.67		191	18.56	5.00	159	19.24	5.54	0.028
Wigelsworth et al. (2013)	No teacher ratings reported																	

[a]*Data obtained upon request from corresponding author.*

one hand challenges of inclusion have clearly been made visible. For instance, it was shown that students with SEN have lower social skills (Frostad and Pijl 2007) and are at risk of low social participation (Banks, McCoy, and Frawley 2018; Zweers et al., 2021). On the other hand, there is still a considerable gap in research providing evidence on how to prevent or intervene these challenges. The main aim of the current study was hence to assess whether SEL interventions are effective in the population of students with SEN. In contrast to the few existing reviews/meta-studies published on the same topic (SEL intervention and its effects on the population of students with SEN), within the current study, only studies following high methodological standards, including a (waiting-)control-group design and reporting results for pre- and post-tests on SEL dimension(s), were included. This decision was made to allow a more reliable judgment of the effects of SEL programs on students with SEN.

First, based on the selected studies, it became apparent that SEL interventions are more frequently evaluated in the United States than in other countries. Only three out of the eleven studies were conducted in Europe, with an overlap of authors for two of these studies. On the one hand, this is somehow not surprising, since the first SEL programs have been developed and implemented within the US context (Osher et al., 2016). On the other hand, previous literature e.g., in Europe has also highlighted the urgent need to foster social-emotional competencies of students with SEN. However, for some effective intervention programs developed in the United States (e.g., PATHS), there are also studies showing that effects could be shown in the United Kingdom but equally for the intervention and control group when implemented outside of the United States (see e.g., Humphrey et al., 2016). These geographical differences regarding the effectiveness may result from various reasons (e.g., transferability of programs from one continent to the other, different school systems, different social norms, etc.) and have been discussed in the respective evaluations. A positive finding from the articles reviewed that needs to be highlighted is that those people delivering the intervention, in most cases teachers, received training prior to implementation. Implementation quality has been shown to be an important factor for intervention outcomes (for an overview see e.g., Durlak and DuPre 2008). Past research has shown that teacher training affects implementation quality and thus the effectiveness of the program regarding SEL outcomes for students (see e.g., Durlak and DuPre 2008; Bradshaw 2015; Humphrey, Barlow, and Lendrum 2018). Therefore, in line with previous research, the present study recommends giving a crucial role to the implementation processes of interventions in schools as well as their evaluation in research.

Regarding the overall results of the current study with respect to the first research question, it can be reported that the review of studies found some evidence supporting the effectiveness of SEL programs for students with SEN. The effects were reported by different raters (e.g., self-ratings from students, teacher ratings, parent ratings) or were evaluated via assessments. Positive changes were particularly reported in emotional outcomes for this subsample, with improvements ranging between small and

TABLE 4 | Parent Ratings.

Study	T1 parent rated	Masures	What is assessed	Subscales	n (IG)	Mean (IG)	SD (IG)	n (CG)	Mean (CG)	SD (CG)	T2 parent rated	n (IG)	Mean (IG)	SD (IG)	n (CG)	Mean (CG)	SD (CG)	Effect size: corrected d
Conducted Problems Prevention Research Group (1999)	Pre-intervention/ Kindergarten	Social Competence Scale-Parent Form Conducted Problems Prevention Research Group (1999)	prosocial behaviors and emotion regulation		405	2.45	0.71	425	2.45	0.72	Post-Intervention/ Grade 1	405	2.41	0.68	425	2.44	0.72	-0.042
		Child Behavior Checklist (CBCL; Achenbach 1991)	Externalizing behavior problems	Externalizing (Tscore)	428	61.64	9.24	426	61.31	8.72		428	62.28	9.25	426	62.76	9.39	0.088
Espelage et al. (2016)	no parent rating reported																	
Faria et al. (2019)	no parent rating reported																	
Greenberg & Kusché (1998)		Child Behavior Checklist and	school performance	social competence	29	31.8	18.8	28	26.1	18.6	Post-intervention	29	45.4	26.6	28	27.7	24.3	0.389
		Child Behavior	and functioning	internalizing		54.2	10.6		51.2	8.3	(approx.		54.1	11.6		53.8	11.1	-0.288
		Profile (CBCL; Achenbach and Edelbrock, 1983)	in social relationships	externalizing		58.6	9.0		56.0	10.5	1 year after T1)		57.0	8.9		55.9	11.8	-0.161
		Eyberg Child Behavior Inventory (ECBI; Robinson et al., 1980)	conduct behavior problems			99.9	26.8		90.8	24.1			94.9	21.6		91.6	33.1	-0.238
Greenberg et al. (1995)	no parent rating reported																	
Jayman et al. (2019)	no parent rating reported																	
Lane (1999)	no parent rating reported																	
McClowry et al. (2005)	Pre-intervention	Parent Daily Report (PDR; Chamberlain and Reid 1987)	Child behavior problems		30	12.50	6.1	12	10.58	6.8	Post-intervention	30	6.41	6.9	12	8.16	5.6	-0.571
Ohl et al. (2013)	no parent rating reported																	
Smith et al. (2016)	no parent rating reported																	
Wigelsworth et al. (2013)	no parent rating reported																	

TABLE 5 | Assesment.

Study	T1 assesment	Masures	What is assessed	Subscales	n (IG)	Mean (IG)	SD (IG)	n (CG)	Mean (CG)	SD (CG)	T2 asssesment	n (IG)	Mean (IG)	SD (IG)	n (CG)	Mean (CG)	SD (CG)	Effect size: corrected d
Conducted Problems Prevention Research Group (1999)	Pre-intervention/ Kindergarten	Emotional Recognition Questionnaire (Ribordy et al., 1988)	Emotion recogntion		416	10.73	2.79	411	10.61	2.85	Post-Intervention/ Grade 1	416	12.91	2.17	411	2.14	2.46	4.634
		Interview of Emotional Experience (IEE; Greenberg and Kusché 1990)	emotion coping		429	0.90	0.62	426	0.94	0.64		429	1.14	0.65	426	1.06	0.65	0.187
		Social Problem-Solving Measure (Dodge et al., 1990)	Social problems solving		424	0.61	0.22	420	0.63	0.22		424	0.70	0.17	420	0.67	0.18	0.262
		Home Inventory With Child (HIWC, Dodge et al., 1990)	Hosstile attributional bias		426	0.67	0.25	421	0.67	0.26		426	0.66	0.24	421	0.67	0.25	-0.041
			Aggressive retaliation		426	0.43	0.31	421	0.42	0.32		426	0.31	0.26	421	0.35	0.27	-0.183
Espelage et al. (2016)	No assessment reported																	
Faria et al. (2019)	Pre-intervention/ December 2016	Test of emotion comprehension (TEC; (Pons & Harris, 2000; Pons, Doudin, et al., 2004)		C1: emotion recognition	21	0.95	0.218	29	0.65	0.48	Post-intervention/ approx. 6 months after T1; June 2017)	21	1.0	0.00	29	0.65	0.48	0.191
				C2: understanding external causes of emotions		0.80	0.40		0.65	0.48			1.0	0.00		0.62	0.49	0.681
				C3: understanding aroused desire		0.57	0.50		0.51	0.50			1.0	0.00		0.51	0.50	1.163
				C4: understanding belief-based emotions		0.57	0.50		0.24	0.48			0.95	0.21		0.34	0.48	0.885
				C5: understanding recall influence in circumstances of emotional		0.47	0.51		0.34	0.48			1.0	0.00		0.27	0.45	1.86

(Continued on following page)

TABLE 5 | (*Continued*) Assesment.

Study	T1 assesment	Masures	What is assessed	Subscales	n (IG)	Mean (IG)	SD (IG)	n (CG)	Mean (CG)	SD (CG)	T2 asssesment	n (IG)	Mean (IG)	SD (IG)	n (CG)	Mean (CG)	SD (CG)	Effect size: corrected d
				states evaluation														
				C6: understanding possibilities of controlling emotional experiences and the alternatives of response		0.52	0.51		0.37	0.49			0.95	0.21		0.44	0.50	0.958
				C7: understanding possibility of hiding an emotional state		0.33	0.48		0.51	0.50			0.95	0.21		0.48	0.50	1.526
				C8: understanding the existence of multiple or contradictory emotional responses		0.428	0.50		0.41	0.50			0.95	0.21		0.41	0.50	1.297
				C9: understanding the role of morality		0.19	0.40		0.51	0.50			0.85	0.35		0.44	0.50	1.618
				Total		0.54	0.19		0.48	0.24			0.96	0.07		0.47	0.25	2.225
Greenberg & Kusché (1998)		Social Problem Solving Assessment Measure-Revised (SPSAM-R; Elias et al., 1978)	Social problems solving	Role-take	29	12.2	3.9	28	10.8	4.5	Post-intervention (approx. 1 year after T1)	29	14.1	2.0	28	11.7	3.4	0.531
				Expectancy of outcome		6.6	2.4		5.5	2.7			8.2	2.2		6.3	2.0	2.183
				Means-end problem-solving		2.9	3.3		1.6	2.2			4.1	2.8		1.0	1.0	1.002
		Kusché Emotional Inventory (KEI; Kusché 1984)	emotional understanding	emotion recognition		67.3	10.00		64.7	9.5			77.7	2.7		67.9	7.7	1.444
				emotion reading		56.8	17.8		53.6	15.9			72.3	6.2		54.6	15.2	1.345
Greenberg et al. (1995)	Pre-intervention/ 1st and 2nd Grade	Kusché Emotional Inventory Revised (KEI-R; Kusché and Beilke. 1988)	Emotional understanding 1. Feelings vocabulary		47			47			1 month post-intervention (approx. 9–10 months after T1 in 2nd	47			47			
				Positive		1.4	0.8		1.2	1.1			2.6	1.4		1.2	0.9	0.982
				Negative feelings		2.8	1.5		2.8	1.3			5.4	2.5		3.2	1.5	1.067
				Total definitions		2.5	2.3		2.1	1.9			2.9	2.0		2.7	2.2	0.57

(Continued on following page)

TABLE 5 | (*Continued*) Assesment.

Study	T1 assesment	Masures	What is assessed	Subscales	n (IG)	Mean (IG)	SD (IG)	n (CG)	Mean (CG)	SD (CG)	T2 asssesment	n (IG)	Mean (IG)	SD (IG)	n (CG)	Mean (CG)	SD (CG)	Effect size: corrected d
			2. Resoning feelings	Are all feelings ok?		0.70	0.5		0.68	0.5	and 3rd Grade)		0.74	0.5		0.7	0.5	0.04
				if yes: How do you know that?		0.6	0.1		0.6	0.8			0.8	0.6		0.5	0.6	0.5
			3. Understanding various aspects of emotional experience															
			Recognise emotions	Knowledge of self		0.99	0.7		0.98	0.7			1.22	0.7		0.98	0.6	0.354
				Knowledge of other		0.74	0.5		0.79	0.5			1.11	0.5		0.88	0.5	0.56
			Understanding simultanious feelings	total scores		5.67	4.2		4.21	3.8			5.63	3.3		6.07	4.3	-0.479
			4. Understanding regulation and expression of feelings															
			Emotion display rules	Can you hide feelings?		1.3	1.5		1.66	1.5			2.72	0.9		1.81	1.5	0.976
				if yes: level of reasoning		1.0	0.9		1.13	0.9			1.53	0.8		1.22	0.9	0.509
				Can others hide feelings from you?		1.53	1.5		2.09	1.4			2.34	1.2		1.81	1.5	0.776
				if yes: level of reasoning		0.6	0.8		1.15	0.9			1.70	0.8		1.54	0.8	0.846
			Changing feelings	Can feelings change?		2.0	1.4		2.68	0.9			2.34	1.2		2.17	1.4	0.78
				if upset, can you change your feelings?		2.12	1.4		2.23	1.3			2.79	1.4		2.0	0.8	0.774
				Level of reasoning		0.32	0.6		0.64	0.9			0.42	0.8		0.94	0.8	-0.232
				Level of reasoning (with picutre cues)		1.70	1.0		1.76	1.0			2.07	1.0		2.07	1.0	0.06
Jayman et al. (2019)	No assessment reported																	
Lane (1999)	No assessment reported																	
McClowry et al. (2005)	No assessment reported																	
Ohl et al. (2013)	No assessment reported																	
Smith et al. (2016)	No assessment reported																	
Wigelsworth et al. (2013)	No assessment reported																	

large effects, with the former predominating. For these outcomes more precisely, ESs were slightly higher for assessments (0.681–4.634) than for students' ratings (-0.258–2.651). Effects for teacher ratings (-0.245 to -0.936) were even a bit lower, and no effect was found in the only study that included parents' ratings. This result might indicate that changes in emotional outcomes are less sensitive for observers compared to assessment. While these outcomes are somewhat promising out of eight studies reporting effects on emotional outcomes, one did not find any effects, while one did not find effects for parent ratings but for the assessment. The picture is different for social/behavioral outcomes. Teacher ratings showed the highest effects (-0.208–1.502) compared with student ratings (0.211 to -0.411), parent ratings (-0.238 to -0.571), and assessments (0.262–0.531), especially for social/problem-solving skills. However, again not all studies showed significant outcomes of the intervention on social behavioral aspects. Interestingly, several studies could not find any effect for externalizing behavior, regardless of the rater. One explanation may be that interventions may not have addressed externalizing behavior within their curriculum or that additional and more specific components were needed for students with behavioral difficulties. To conclude, it can be stated that nearly half of the studies included outcomes from different sources, which is highly important since outcomes might be biased e.g., if the teacher him/herself is implementing the intervention. Further, other studies already indicated that raters' perspectives might play a significant role and stressed the importance of multi-informant assessment (e.g., Achenbach 2018; Miller et al., 2018). Achenbach (2018) argues that students' behavior in particular might vary in different contexts, which results in different perceptions of different raters. However, taking all sources into account, within the current study, small to medium ESs were demonstrated by all raters (students' self-ratings, teacher ratings, parent ratings, assessments), although most of the effects were small.

With respect to the second research question (specific effects based on specific intervention conditions), no conclusion can be drawn within the current literature review. Generally, different intervention programs have been used within the included studies. Moreover, the frequency of the implementation of the intervention varied widely, and around one third of the studied did not indicate information on frequency. Two studies provided insufficient information about the individuals delivering the intervention. However, most interventions (seven out of eleven) have been implemented by the teachers. This is somewhat promising, as the ecological validity is higher if no external persons (e.g., researchers) are interfering in the setting, though more experimental settings often show higher ESs at least for short-term effects. Furthermore, as only four studies have been included where no teachers implemented the intervention, no precise conclusions can be drawn within the current review study.

Regarding the third research question, it can be reported that within the included studies, the samples varied a lot. For instance, not only studies with students having an official diagnosis of SEN, but also studies with students who scored clinical/high/at-risk of BESD were included. However, taking into account the specific operationalizations of SEN (e.g., legal diagnosis, teacher rating, parent rating) or the specific type of SEN (e.g., behavior problems, physical disability), it was not possible within the present study to draw specific conclusions according to the population of students with SEN since the total number of studies included was limited. For example, several studies included students with SEN in the intervention but did not provide separate statistical data for this subsample. Subgroup analyses provide an important contribution to the evaluation of whether an intervention achieves differential effects in specific student populations. Furthermore, in several trials, students with SEN were completely excluded from the intervention study (e.g., Aber, Brown, and Jones 2003; Gueldner and Merrell 2011; Ialongo et al., 2019). Therefore, the studied population within the current literature review is also influenced by this bias. Not only, but also for students with SEN, it would be crucial to include them in interventions and evaluate their social-emotional outcomes. Researchers are therefore encouraged to use instruments that are appropriate for these students.

LIMITATIONS

The current study has to be read in light of several limitations. First, relevant publications may not have been identified due to the keywords used or missing journal access. Moreover, within the current study, only English-language publications were considered eligible. Since intervention studies might be aimed at a practitioner-oriented audience (e.g., teachers), it is expected that there will be more studies published in the language of instruction. Next, likewise, as in all systematic literature reviews, there is a publication bias affecting the outcomes. Non-significant studies generally are less often published. Additionally, non-significant outcomes for the treatment group or contrary to the expected results (e.g., negative treatment effects, etc.) are rarely published (for more information about the publication bias see e.g., (Cooper, DeNeve, and Charlton 1997; Card 2012). In addition, for some studies, it was difficult to determine whether the intervention program could be considered as SEL. In particular, the lack of information about the intervention led to decision disagreements among the authors. While for some included interventions (e.g., PATHS, SEAL) it was clear that they were following the SEL criteria, for others it was rather difficult to make a clear decision, and those papers therefore had to be excluded from the current review. Similarly, for some studies, detailed (descriptive) information was missing in the publications and therefore corresponding authors were contacted via email. While some information was added due to personal contact between the original authors of the study and the authors of the review, some papers had to be excluded due to unavailable information. Furthermore, it has to be stated that systematical literature reviews are rare in the field of students with SEN. This can partly be explained by specific problems. First of all, the studied population is broad and still difficult to narrow down. Even studies using the same terminology (SEN) do not compare similar populations; for example, the criteria for having a diagnosis of SEN varies widely between countries and

sometimes even within countries (see e.g., Susanne, 2021). Moreover, summarizing students into a group of students with SEN diagnosis is difficult since the group of students with SEN is heterogeneous. Therefore, one student with SEN might be very different from another student with SEN. Just giving one example: in the population of students with SEN, the age of students attending the same grades might vary widely, and therefore studies including students older than eighteen had to be excluded. Furthermore, SEN was also operationalized based on clinical scores from diagnostic assessment instruments. In this regard, scores were based on teacher and/or parent ratings (Conduct Problems Prevention Research Group, 1999; McClowry et al., 2005), but also one study based on students' ratings (Wigelsworth, Lendrum, and Humphrey 2013) was included. However, previous literature has already indicated that behavior ratings are sensitive based on the rater (e.g., Cheng et al., 2018).

Finally, the possibility of giving a quantitative summary or conducting a meta-analysis is limited within the current review. Not only the insufficient numbers of included studies in total but also the huge variations in study design, the intervention conditions, and the methodological quality cut the possibilities for showing overall ESs. Therefore, conducting a meta-analysis was not feasible with such a high diversity in the population and the interventions studied, taking into account interesting research questions (e.g., correlation of intervention duration/frequency and effectiveness, who should deliver the intervention). Taking these limitations into account, the ESs reported within this study might be overestimated. ESs could be lower if more variables are included. Hence, only including pre-post data of the intervention and control groups and no other variables could lead to overestimated ES. Potential moderator variables (e.g., the type of disability, age of students, etc.) and possible interaction effects of variables (e.g., duration of intervention, frequency of intervention) have to be investigated in future research.

CONCLUSION

This literature review provided the first systematic insight into the effectiveness of SEL programs in the population of students with SEN. While some positive effects could be identified, an important finding of the current study is the need for further research. There is still the need for research to determine the features of intervention programs that are most successful. Therefore, in order to achieve the most successful outcomes for students with SEN, much more research is required in the future. One further gap identified in this literature review regarding pedagogical practice was that in the studies reviewed, students with SEN themselves were minimally involved in intervention decisions. Not a single study included student decisions (e.g., about the specific intervention program). Involving the advocates themselves could increase the effects, as self-determination plays a crucial role, especially in the subgroup of students with SEN. Additionally, it would be critical to foster teacher awareness of evidence-based teaching practices as part of the teacher training curriculum. Finally, the highest effects on a student population can be reached if effective strategies are used in teachers' day-to-day practice.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

REFERENCES

Abedi, J., and Faltis, C. (2015). Teacher Assessment and the Assessment of Students with Diverse Learning Needs. *Rev. Res. Edu.* 39 (1), vii–xiv. doi:10.3102/0091732X14558995

Aber, J. L., Brown, J. L., and Jones, S. M. (2003). Developmental Trajectories toward Violence in Middle Childhood: Course, Demographic Differences, and Response to School-Based Intervention. *Dev. Psychol.* 39 (2), 324–348. doi:10.1037//0012-1649.39.2.324

Achenbach, T. M., and Edelbrock, C. S. (1983). *Manual for the Child Behavior Checklist and Revised Child Behavior Profile*. Burlington, VT: T. M. Achenbach.

Achenbach, T. M. (1991). *Integrative Guide for the 1991 CBCL/4-18, YSR, and TRF Profiles*. Burlington, VT: University of Vermont.

Achenbach, T. M. (2018). Multi-Informant and Multicultural Advances in Evidence-Based Assessment of Students' Behavioral/Emotional/Social Difficulties. *Eur. J. Psychol. Assess.* 34 (2), 127–140. doi:10.1027/1015-5759/a000448

Allen, K., Kern, M. L., Vella-Brodrick, D., Hattie, J., and Waters, L. (2018). What Schools Need to Know about Fostering School Belonging: A Meta-Analysis. *Educ. Psychol. Rev.* 30 (1), 1–34. doi:10.1007/s10648-016-9389-8

Amholt, T. T., Dammeyer, J., Carter, R., and Niclasen, J. (2020). Psychological Well-Being and Academic Achievement Among School-Aged Children: A Systematic Review. *Child. Ind. Res.* 13 (5), 1523–1548. doi:10.1007/s12187-020-09725-9

Banks, J., McCoy, S., and Frawley, D. (2018). One of the Gang? Peer Relations Among Students with Special Educational Needs in Irish Mainstream Primary Schools. *Eur. J. Spec. Needs Edu.* 33 (3), 396–411. doi:10.1080/08856257.2017.1327397

Barnes, T. N., Smith, S. W., and Miller, M. D. (2014). School-Based Cognitive-Behavioral Interventions in the Treatment of Aggression in the United States: A Meta-Analysis. *Aggression Violent Behav.* 19 (4), 311–321. doi:10.1016/j.avb.2014.04.013

Bracken, B. A., and Keith, L. K. (2004). *Clinical Assessment of Behavior*. Lutz, FL: Psychological Assessment Resources.

Bradshaw, C. P. (2015). Translating Research to Practice in Bullying Prevention. *Am. Psychol.* 70 (4), 322–332. doi:10.1037/a0039114

Bryant, A., Guy, J., Holmes, J., Duncan, A., Baker, K., Gathercole, S., et al. (2020). The Strengths and Difficulties Questionnaire Predicts Concurrent Mental Health Difficulties in a Transdiagnostic Sample of Struggling Learners. *Front. Psychol.* 11, 3125. doi:10.3389/fpsyg.2020.587821

Bücker, S., Nuraydin, S., Simonsmeier, B. A., Schneider, M., and Luhmann, M. (2018). Simonsmeier, Michael Schneider, and Maike LuhmannSubjective Well-Being and Academic Achievement: A Meta-Analysis. *J. Res. Personal.* 74 (June), 83–94. doi:10.1016/j.jrp.2018.02.007

Card, N. A. (2012). *Applied Meta-Analysis for Social Science ResearchApplied Meta-Analysis for Social Science Research*. New York, NY, US: Guilford Press.

Chamberlain, P., and Reid, J. B. (1987). Parent Observation and Report of Child Symptoms. *Behav. Assess.* 9 (1), 97–109.

Cheng, S., Keyes, K. M., Bitfoi, A., Carta, M. G., Koç, C., Goelitz, D., et al. (2018). Keyes, Adina Bitfoi, Mauro Giovanni Carta, Ceren Koç, Dietmar Goelitz, Roy Otten, et alUnderstanding Parent-Teacher Agreement of the Strengths and Difficulties Questionnaire (SDQ): Comparison across Seven European Countries. *Int. J. Methods Psychiatr. Res.* 27 (1), e1589. doi:10.1002/mpr.1589

Collaborative for Academic, Social, and Emotional Learning (2020). CASEL SEL Framework. Available at: https://casel.org/wp-content/uploads/2020/12/CASEL-SEL-Framework-11.2020.pdf.

Conduct Problems Prevention Research Group (1999). Initial Impact of the Fast Track Prevention Trial for Conduct Problems: I. The High-Risk Sample. Conduct Problems Prevention Research Group. *J. Consult Clin. Psychol.* 67 (5), 631–647.

Conducted Problems Prevention Research Group (1999). *Technical Reports for the Fast Track Assessment Battery*. Fast Track Project.

Cooper, H., DeNeve, K., and Charlton, K. (1997). Finding the Missing Science: The Fate of Studies Submitted for Review by a Human Subjects Committee. *Psychol. Methods* 2 (4), 447–452. doi:10.1037/1082-989X.2.4.447

Corcoran, R. P., Cheung, A. C. K., Kim, E., and Xie, C. (2018). Effective Universal School-Based Social and Emotional Learning Programs for Improving Academic Achievement: A Systematic Review and Meta-Analysis of 50 Years of Research. *Educ. Res. Rev.* 25, 56–72. doi:10.1016/j.edurev.2017.12.001

Crick, N. R. (1996). The Role of Overt Aggression, Relational Aggression, and Prosocial Behavior in the Prediction of Children's Future Social Adjustment. *Child. Dev.* 67 (5), 2317–2327. doi:10.1111/j.1467-8624.1996.tb01859.x

D'Zurilla, T. J., Nezu, A. M., and Maydeu-Olivares, A. (2004). "Social Problem Solving: Theory and Assessment," in *Social Problem Solving: Theory, Research, and Training*. Editors E. C. Chang, T. J. D'Zurilla, and L. J. Sanna (Washington: American Psychological Association), 11–27. doi:10.1037/10805-001

Davis, M. H. (1983). Measuring Individual Differences in Empathy: Evidence for a Multidimensional Approach. *J. Personal. Soc. Psychol.* 44 (1), 113–126. doi:10.1037/0022-3514.44.1.113

Dimitrellou, E., and Hurry, J. (2019). School Belonging Among Young Adolescents with SEMH and MLD: The Link with Their Social Relations and School Inclusivity. *Eur. J. Spec. Needs Edu.* 34 (3), 312–326. doi:10.1080/08856257.2018.1501965

Dodge, K. A., Bates, J. E., and Pettit, G. S. (1990). Mechanisms in the Cycle of Violence. *Science* 250 (4988), 1678–1683. doi:10.1126/science.2270481

Dodge, K. A., and Coie, J. D. (1987). Social-information-processing Factors in Reactive and Proactive Aggression in Children's Peer Groups. *J. Pers Soc. Psychol.* 53, 1146–1158. doi:10.1037//0022-3514.53.6.1146

Domitrovich, C. E., Durlak, J. A., Staley, K. C., and Weissberg, R. P. (2017). Social-Emotional Competence: An Essential Factor for Promoting Positive Adjustment and Reducing Risk in School Children. *Child. Dev.* 88 (2), 408–416. doi:10.1111/cdev.12739

Durlak, J. A., and DuPre, E. P. (2008). Implementation Matters: A Review of Research on the Influence of Implementation on Program Outcomes and the Factors Affecting Implementation. *Am. J. Community Psychol.* 41 (3–4), 327–350. doi:10.1007/s10464-008-9165-0

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., and Schellinger, K. B. (2011). The Impact of Enhancing Students' Social and Emotional Learning: a Meta-Analysis of School-Based Universal Interventions. *Child. Dev.* 82 (1), 405–432. doi:10.1111/j.1467-8624.2010.01564.x

Elias, M. J., Larcen, S. W., Zlotlow, S. P., and Chinsky, J. H. (1978). *An Innovative Measure of Children's Cognitions in Problematic Interpersonal.* Toronto, Canada: Paper presented at the American Psychological Association.

Elias, M. J., Zins, J. E., Weissberg, R. P., Frey, K. S., Greenberg, M. T., Haynes, N. M., et al. (1997). *Promoting Social and Emotional Learning: Guidelines for Educators*. Alexandria, Va., USA: Association for Supervision and Curriculum Development.

Espelage, D. L., Rose, C. A., and Polanin, J. R. (2016). Social-Emotional Learning Program to Promote Prosocial and Academic Skills Among Middle School Students with Disabilities. *Remedial Spec. Edu.* 37 (6), 323–332. doi:10.1177/0741932515627475

Faria, S. M. M., Esgalhado, G., and PereiraPereira, C. M. G. (2019). Efficacy of a Socioemotional Learning Programme in a Sample of Children with Intellectual Disability. *J. Appl. Res. Intellect. Disabil.* 32 (2), 457–470. doi:10.1111/jar.12547

Frederickson, N., and Cline, T. (2015). *Special Educational Needs, Inclusion and Diversity*. Third edition. Maidenhead, Berkshire: Open University Press.

Frostad, P., and Pijl, S. J. (2007). Does Being Friendly Help in Making Friends? the Relation between the Social Position and Social Skills of Pupils with Special Needs in Mainstream Education. *Eur. J. Spec. Needs Edu.* 22 (1), 15–30. doi:10.1080/08856250601082224

Gesten, E. L. (1976). A Health Resources Inventory: The Development of a Measure of the Personal and Social Competence of Primary-Grade Children. *J. Consulting Clin. Psychol.* 44 (5), 775–786. doi:10.1037/0022-006X.44.5.775

Gioia, G. A., Isquith, P. K., Retzlaff, P. D., and Espy, K. A. (2002). Confirmatory Factor Analysis of the Behavior Rating Inventory of Executive Function (BRIEF) in a Clinical Sample. *Child. Neuropsychol.* 8 (4), 249–257. doi:10.1076/chin.8.4.249.13513

Goldberg, J. M., Sklad, M., Elfrink, T. R., Schreurs, K. M. G., Bohlmeijer, E. T., and Clarke, A. M. (2019). Effectiveness of Interventions Adopting a Whole School Approach to Enhancing Social and Emotional Development: A Meta-Analysis. *Eur. J. Psychol. Educ.* 34 (4), 755–782. doi:10.1007/s10212-018-0406-9

Goodman, R., Meltzer, H., and Bailey, V. (1998). The Strengths and Difficulties Questionnaire: A Pilot Study on the Validity of the Self-Report Version. *Eur. Child. Adolesc. Psychiatry* 7 (3), 125–130. doi:10.1007/s007870050057

Goodman, R. (1997). The Strengths and Difficulties Questionnaire: A Research Note. *J. Child. Psychol. Psychiatry* 38 (5), 581–586. doi:10.1111/j.1469-7610.1997.tb01545.x

Greenberg, M. T., and Kusché, C. A. (1990). *Inventory of Emotional Experience: Technical Report*. Seattle: University of Washington.

Greenberg, M. T., and Kusché, C. A. (1998). Preventive Intervention for School-Age Deaf Children: The PATHS Curriculum. *J. Deaf Stud. Deaf Edu.* 3 (1), 15. doi:10.1093/oxfordjournals.deafed.a014340

Greenberg, M. T., Kusche, C. A., Cook, E. T., and Quamma, J. P. (1995). Promoting Emotional Competence in School-Aged Children: The Effects of the PATHS Curriculum. *Dev. Psychopathol* 7 (1), 117–136. doi:10.1017/S0954579400006374

Gresham, F. M., and Elliott, S. N. (1990). *Social Skills Rating System*. Circle Pines, MN: American Guidance Service.

Gueldner, B., and Merrell, K. (2011). Evaluation of a Social-Emotional Learning Program in Conjunction with the Exploratory Application of Performance Feedback Incorporating Motivational Interviewing Techniques. *J. Educ. Psychol. Consultation* 21 (1), 1–27. doi:10.1080/10474412.2010.522876

Hagarty, I., and Morgan, G. (2020). Social-Emotional Learning for Children with Learning Disabilities: A Systematic Review. *Educ. Psychol. Pract.* 36 (2), 208–222. doi:10.1080/02667363.2020.1742096

Hall, C. L., Guo, B., Valentine, A. Z., Groom, M. J., Daley, D., Sayal, K., et al. (2019). The Validity of the Strengths and Difficulties Questionnaire (SDQ) for Children with ADHD Symptoms. *PLOS ONE* 14 (6), e0218518. doi:10.1371/journal.pone.0218518

Hascher, Tina. (2017). "Die Bedeutung von Wohlbefinden und Sozialklima für Inklusion," in *Inklusion: Profile für die Schul- und Unterrichtsentwicklung in Deutschland, Österreich und der Schweiz: theoretische Grundlagen, empirische Befunde, Praxisbeispiele. Beiträge zur Bildungsforschung* (Münster New York: Waxmann), 69–79.

Humphrey, N., Barlow, A., and Lendrum, A. (2018). Quality Matters: Implementation Moderates Student Outcomes in the PATHS Curriculum. *Prev. Sci.* 19 (2), 197–208. doi:10.1007/s11121-017-0802-4

Humphrey, N., Barlow, A., Wigelsworth, M., Lendrum, A., Pert, K., Joyce, C., et al. (2016). A Cluster Randomized Controlled Trial of the Promoting Alternative Thinking Strategies (PATHS) Curriculum. *J. Sch. Psychol.* 58 (October), 73–89. doi:10.1016/j.jsp.2016.07.002

Humphrey, N., Lendrum, A., and Wigelsworth, M. (2013). Making the Most Out of School-Based Prevention: Lessons from the Social and Emotional Aspects of Learning (SEAL) Programme. *Emotional Behav. Difficulties* 18 (3), 248–260. doi:10.1080/13632752.2013.819251

Ialongo, N. S., Domitrovich, C., Embry, D., Greenberg, M., Lawson, A., Becker, K. D., et al. (2019). Celene Domitrovich, Dennis Embry, Mark Greenberg, April Lawson, Kimberly D. Becker, and Catherine BradshawA Randomized Controlled Trial of the Combination of Two School-Based Universal

Preventive Interventions. *Dev. Psychol.* 55 (6), 1313–1325. doi:10.1037/dev0000715

Jayman, M., Ohl, M., Hughes, B., and Fox, P. (2019). Improving Socio-Emotional Health for Pupils in Early Secondary Education with Pyramid: A School-Based, Early Intervention Model. *Br. J. Educ. Psychol.* 89 (1), 111–130. doi:10.1111/bjep.12225

Jones, S. M., Barnes, S. P., Bailey, R., and Doolittle, E. J. (2017). Promoting Social and Emotional Competencies in Elementary School. *Future Child.* 27 (1), 49–72. doi:10.1353/foc.2017.0003

Juvonen, J., Lessard, L. M., Rastogi, R., Schacter, H. L., and Smith, D. S. (2019). Promoting Social Inclusion in Educational Settings: Challenges and Opportunities. *Educ. Psychol.* 54 (4), 250–270. doi:10.1080/00461520.2019.1655645

Kaptein, S., Jansen, D. E., Vogels, A. G., and Reijneveld, S. A. (2008). Mental Health Problems in Children with Intellectual Disability: Use of the Strengths and Difficulties Questionnaire. *J. Intellect. Disabil. Res.* 52 (Pt 2), 125–131. doi:10.1111/j.1365-2788.2007.00978.x

Kaya, M., and Erdem, C. (2021). Students' Well-Being and Academic Achievement: A Meta-Analysis Study. *Child. Ind. Res.* 14 (5), 1743–1767. doi:10.1007/s12187-021-09821-4

Klauer, K. J. (2014). Training des induktiven Denkens - Fortschreibung der Metaanalyse von 2008. *Z. für Pädagogische Psychol.* 28 (1–2), 5–19. doi:10.1024/1010-0652/a000123

Kusché, C. A., Greenberg, M. T., and Beilke, B. (1988). *The Kusche Affective Interview*. Washington: University of Washington: Department of Psychology.

Kusché, C. A. (1984). *The Understanding of Emotion Concepts by Deaf Children: An Assessment of an Affective Education Curriculum*.

Luckner, J. L., and Movahedazarhouligh, S. (2019). Social-Emotional Interventions with Children and Youth Who Are Deaf or Hard of Hearing: A Research Synthesis. *J. Deaf Stud. Deaf Educ.* 24 (1), 1–10. doi:10.1093/deafed/eny030

Lynne Lane, K. (1999). Young Students at Risk for Antisocial Behavior: The Utility of Academic and Social Skills Interventions. *J. Emotional Behav. Disord.* 7 (4), 211–223. doi:10.1177/106342669900700403

McClowry, S. G., Snow, D. L., and Tamis-LeMonda, C. S. (2005). An Evaluation of the Effects of INSIGHTS on the Behavior of Inner City Primary School Children. *J. Prim. Prev.* 26 (6), 567–584. doi:10.1007/s10935-005-0015-7

McCoy, S., and Banks, J. (2012). Simply Academic? Why Children with Special Educational Needs Don't like School. *Eur. J. Spec. Needs Edu.* 27 (1), 81–97. doi:10.1080/08856257.2011.640487

Meadow, K. P. (1983). *Revised Manual. Meadow/Kendall Social-Emotional Assessment Inventory for Deaf and Hearing-Impaired Children*. Washington, DC: Pre-College Programs, Gallaudet Research Institute.

Merrell, K. W. (2010). Linking Prevention Science and Social and Emotional Learning: The Oregon Resiliency Project. *Part a Spec. Issue Using Prev. Sci. Address Ment. Health Issues Schools* 47 (1), 55–70.

Miller, F. G., Johnson, A. H., Yu, H., Chafouleas, S. M., McCoach, D. B., Riley-Tillman, T. C., et al. (2018). Methods Matter: A Multi-Trait Multi-Method Analysis of Student Behavior. *J. Sch. Psychol.* 68 (June), 53–72. doi:10.1016/j.jsp.2018.01.002

Morganti, A., Pascoletti, S., and Signorelli, A. (2019). *Index for Social Emotional Technologies: Challenging Approaches to Inclusive Education*. London: Routledge. doi:10.4324/9781351185073

Morrison, J. M., Sullivan, F., Murray, E., and Jolly, B. (1999). Evidence-Based Education: Development of an Instrument to Critically Appraise Reports of Educational Interventions. *Med. Educ.* 33 (12), 890–893. doi:10.1046/j.1365-2923.1999.00479.x

Moy, G., Polanin, J. R., McPherson, C., and Phan, T.-V. (2018). International Adoption of the Second Step Program: Moderating Variables in Treatment Effects. *Sch. Psychol. Int.* 39 (4), 333–359. doi:10.1177/0143034318783339

Ohl, M., Fox, P., and Mitchell, K. (2013). Strengthening Socio-Emotional Competencies in a School Setting: Data from the Pyramid Project. *Br. J. Educ. Psychol.* 83 (3), 452–466. doi:10.1111/j.2044-8279.2012.02074.x

Osher, D., Kidron, Y., Brackett, M., Dymnicki, A., Jones, S., and Weissberg, R. P. (2016). Advancing the Science and Practice of Social and Emotional Learning. *Rev. Res. Edu.* 40 (1), 644–681. doi:10.3102/0091732X16673595

Page, M. J., Moher, D., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., MulrowMulrow, C. D., et al. (2021). PRISMA 2020 Explanation and Elaboration: Updated Guidance and Exemplars for Reporting Systematic Reviews. *Bmj* 1, n160. doi:10.1136/bmj.n160

Phipps, S., and Steele, R. (2002). Repressive Adaptive Style in Children with Chronic Illness. *Psychosom Med.* 64 (1), 34–42. doi:10.1097/00006842-200201000-00006

Pons, F., and Harris, P. L. (2000). *Test of Emotion Comprehension – TEC*. Oxford, UK: University of Oxford.

Pons, F., Doudin, P. L., and Harris, P. L. (2004). "La compréhension des émotions:," in *Les émotions à l'école edited by Louise Lafortune, Pierre-André Doudin, Fracisco Pons and Dawson R. Hancock* (Sainte-Foy, France: Presses de l'Université du Québec), 7–32. doi:10.2307/j.ctv18pgxjg.4

Ribordy, S. C., Camras, L. A., Stefani, R., and Spaccarelli, S. (1988). Vignettes for Emotion Recognition Research and Affective Therapy with Children. *J. Clin. Child Psychol.* 17 (4), 322–325. doi:10.1207/s15374424jccp1704_4

Robinson, E. A., Eyberg, S. M., and Ross, A. W. (1980). The Standardization of an Inventory of Child Conduct Problem Behaviors. *J. Clin. Child Psychol.* 9 (1), 22–28. doi:10.1080/15374418009532938

Siddiqui, N., and M. Ventista, O. (2018). A Review of School-Based Interventions for the Improvement of Social Emotional Skills and Wider Outcomes of Education. *Int. J. Educ. Res.* 90 (1), 117–132. doi:10.1016/j.ijer.2018.06.003

Sklad, M., Diekstra, R., Ritter, M. D., Ben, J., and Gravesteijn, C. (2012). Effectiveness of School-Based Universal Social, Emotional, and Behavioral Programs: Do They Enhance Students' Development in the Area of Skill, Behavior, and Adjustment? *Psychol. Schs.* 49 (9), 892–909. doi:10.1002/pits.21641

Skrzypiec, G., Askell-Williams, H., Slee, P., and Rudzinski, A. (2016). Students with Self-Identified Special Educational Needs and Disabilities (Si-SEND): Flourishing or Languishing!. *Int. J. Disabil. Dev. Edu.* 63 (1), 7–26. doi:10.1080/1034912X.2015.1111301

Smith, S. W., Daunic, A. P., Aydin, B., Van Loan, C. L., Barber, B. R., and Taylor, G. G. (2016). Effect of Tools for Getting along on Student Risk for Emotional and Behavioral Problems in Upper Elementary Classrooms: A Replication Study. *Sch. Psychol. Rev.* 45 (1), 73–92. doi:10.17105/SPR45-1.73-92

Sullivan, A. L., and Simonson, G. R. (2016). A Systematic Review of School-Based Social-Emotional Interventions for Refugee and War-Traumatized Youth. *Rev. Educ. Res.* 86 (2), 503–530. doi:10.3102/0034654315609419

Susanne, S. (2021). "Inclusive and Special Education in Europe," in *The Oxford Encyclopedia of Inclusive and Special Education*. Editors U. Sharma and S. Salend (Oxford: Oxford University Press), 807–819. doi:10.1093/acrefore/9780190264093.013.1230

Susanne, S. (2018). "Peer-relaNons of Students with Special Educational Needs in Inclusive Education," in *Dirib Cittadinanza Inclusione*. Editors S. Polenghi, M. Fiorucci, and L. Agostinetto (Rovato: Pensa MultiMedia), 15–24. Available at: https://www.siped.it/wp-content/uploads/2018/10/2018-Roma-Ab.pdf

Tang, J. S. Y., Chen, N. T. M., Falkmer, M., Bölte, S., and Girdler, S. (2019). A Systematic Review and Meta-Analysis of Social Emotional Computer Based Interventions for Autistic Individuals Using the Serious Game Framework. *Res. Autism Spectr. Disord.* 66 (10), 101412. doi:10.1016/j.rasd.2019.101412

Taylor, R. D., Oberle, E., Durlak, J. A., and Weissberg, R. P. (2017). Promoting Positive Youth Development through School-Based Social and Emotional Learning Interventions: A Meta-Analysis of Follow-Up Effects. *Child. Dev.* 88 (4), 1156–1171. doi:10.1111/cdev.12864

Ullebø, A. K., Posserud, M.-B., Heiervang, E., Gillberg, C., and Obel, C. (2011). Screening for the Attention Deficit Hyperactivity Disorder Phenotype Using the Strength and Difficulties Questionnaire. *Eur. Child. Adolesc. Psychiatry* 20 (9), 451–458. doi:10.1007/s00787-011-0198-9

Walker, H. M., and Severson, H. H. (1992). *Systematic Screening for Behavior Disorders (SSBD)*. Second Edition. Boston Ave: Sopris West, 1140.

Walker, H. M. (1976). *Walker Problem Behavior Identification Checklist (Manual)*. Los Angeles: Western Psychological Services.

Weare, K., and Nind, M. (2011). Mental Health Promotion and Problem Prevention in Schools: What Does the Evidence Say? *Health Promot. Int.* 26 (Suppl. 1), i29–69. doi:10.1093/heapro/dar075

Wigelsworth, M., Humphrey, N., and Lendrum, A. (2013). Evaluation of a School-wide Preventive Intervention for Adolescents: The Secondary Social and Emotional Aspects of Learning (SEAL) Programme. *Sch. Ment. Health* 5 (2), 96–109. doi:10.1007/s12310-012-9085-x

Wigelsworth, M., Lendrum, A., Oldfield, J., Scott, A., Ten Bokkel, I., Tate, K., et al. (2016). The Impact of Trial Stage, Developer Involvement and International Transferability on Universal Social and Emotional Learning Programme Outcomes: A Meta-Analysis. *Cambridge J. Edu.* 46 (3), 347–376. doi:10.1080/0305764X.2016.1195791

Zweers, I., de Schoot, R. A. G. J. v., Tick, N. T., Depaoli, S., CliftonClifton, J. P., de Castro, B. O., et al. (2021). Social-emotional Development of Students with Social-Emotional and Behavioral Difficulties in Inclusive Regular and Exclusive Special Education. *Int. J. Behav. Dev.* 45 (1), 59–68. doi:10.1177/0165025420915527

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Facilitating Research-Informed Educational Practice for Inclusion. Survey Findings From 147 Teachers and School Leaders in England

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This paper considers the engagement by teachers and school leaders in England in educational practices that are both 'research-informed' and supportive of inclusive education. We do so by seeking to understand the benefits, costs, and signifying factors these educators associate with research-use. In undertaking the study, we first worked to develop and refine a survey instrument (the 'Research-Use BCS survey') that could be used to uniquely and simultaneously measure these concepts. Our survey development involved a comprehensive process that comprised: (1) a review of recent literature; (2) item pre-testing; and (3) cognitive interviews. We then administered this questionnaire to a representative sample of English educators. Although response rates were somewhat impacted by the recent COVID-19 pandemic, we achieved a sufficient number of responses (147 in total) to allow us to engage in descriptive analyses, as well as the production of classification trees. Our analysis resulted in several key findings, including that: (1) if respondents see the benefits of research, they are likely to use it (with the converse also true); (2) if educators have the needed support of their colleagues, they are more likely to use research; and (3) perceiving research-use as an activity that successful teachers and schools engage in is also associated with individual-level research use. We conclude the paper by pointing to potential interventions and strategies that might serve (at least, in the English context) to enhance research-use, so increasing the likelihood of the development and use of effective inclusive practices in schools.

Keywords: research-use, research-informed practice, teacher research use, classification tree analysis, Jean Baudrillard, benefits of research, costs of research, signification of research

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INTRODUCTION

This paper considers the engagement by teachers and school leaders in England in educational practices that are both 'research-informed' and supportive of inclusive education. For the purposes of this paper, we define research-informed educational practice (RIEP) as the use of academic research by teachers and school leaders, in order to improve aspects of their teaching, decision-making, leadership or ongoing professional learning (Walker, 2017; Brown, 2020). Inclusive

practice, meanwhile, represents the development and enactment of approaches to pedagogy, curriculum and assessment that enable all students, irrespective of ability, to learn together in one environment. In other words, the aim of such practices is to enable all children to participate meaningfully and effectively in mainstream education, whilst avoiding the marginalization of learners based on labeling, pre-conception or access (Mintz and Wyse, 2015; Mintz et al., 2020).

There are strong reasons to encourage RIEP generally. For instance, the emerging evidence base indicates that, if educators engage with research-evidence to make or change decisions, embark on new courses of action, or develop new practices, then this can have a positive impact for both teaching and learning outcomes (e.g., Cordingley, 2013; Mincu, 2014; Cain, 2015; Godfrey, 2016; Rose et al., 2017; Crain-Dorough and Elder, 2021). There are also myriad social and moral imperatives which, together, present the case that educators 'should' engage with research-evidence if it is possible for them to do so. This argument is nicely encapsulated by Anne Oakley (2000) who some 20 years ago argued that: "those who intervene in other people's lives [should] do so with the utmost benefit and least harm" (2000: p. 3). When it comes to inclusion, therefore, this imperative dictates that practitioners 'ought' to ensure approaches to inclusive practice are informed by the best available evidence, so as to be as beneficially impactful as possible. Naturally this engagement should be critical in nature, and the research in question should be of recognizably high quality; and for a comprehensive overview of both critical engagement and how to assess the quality of research-evidence, we point readers in the direction of Gough (2021).

Inclusive education is increasingly seen as a core part of how equitable education systems, globally, should function (Van Mieghem et al., 2020). Simultaneously, however, considering inclusive practice or any other type of educational practices, RIEP – as a 'business as usual' way of working – is yet to take hold in the vast majority of schools. This is the case both in England and more widely (Graves and Moore, 2017; Wisby and Whitty, 2017; Biesta et al., 2019; Crain-Dorough and Elder, 2021). This 'research-practice gap' is apparent in the findings of a mixed methods study undertaken by Coldwell et al. (2017) to examine England's progress toward a research-evidence-informed school system. Coldwell et al. (2017, p. 7) findings include that educators generally did not feel confident in using research-evidence and that there was "limited evidence from [their] study of teachers directly [using] research findings to change their practice." Later work, such as the recent survey of 1,670 teachers in England undertaken by the National Foundation for Educational Research, presents a similar picture. Here it was found that academic research had only a 'small to moderate' influence on teacher decision making. Instead of research-evidence, teachers were in fact much more likely to draw ideas and support from their *own experiences* (60 percent of respondents identified *ideas generated by me or my school*), or *the experiences of other teachers/schools* (42 per cent of respondents identified *ideas from other schools*), when deciding on approaches to improve student outcomes. In addition, *non-research-based continuing professional development* (*CPD*) was also cited as an important influence (54 percent of respondents). These compare to the much lower figures of 13 percent and seven percent for *sources based on the work of research organizations* and *advice/guidance from a university or research organization*, respectively (Walker et al., 2019).

Using research-evidence to facilitate any kind of educational improvement typically involves educators (either collectively or individually): (1) accessing academic research; (2) being able to comprehend academic research; (3) being able to critically engage with research-evidence, understanding both its strengths and weaknesses, as well as how its warrants for truth can be justified; (4) relating research-evidence to existing knowledge and understanding; and, where relevant, (5) making or changing decisions, embarking on new courses of action, or developing new practices. Reasons traditionally given for the disconnect between research and practice invariably relate to each of these five steps. For example, it has been suggested that educators can often struggle to access academic research, which can often be situated behind pay walls (Goldacre, 2013). It can also be hard for educators to engage with academic research due to the esoteric nature of the language used (Hargreaves, 1996; Goldacre, 2013; Cain et al., 2019). There has been much critique of the quality of educational research as well as the concomitant suggestion that it should not be trusted to provide a firm basis for practice development (Hargreaves, 1996; Hammersley, 1997; Biesta, 2007; Goldacre, 2013; Wisby and Whitty, 2017; Wrigley, 2018). Academic research is also often critiqued for being either too context independent or because it reports on very specific contexts. This means educators can often find it difficult to know how best to apply findings to their settings (Biesta, 2007; Wrigley, 2018; Cain et al., 2019; Gough, 2021). Another often-cited reason for the research-practice gap is that teachers and school leaders do not always have enough time to engage with research, to learn from it, or use it to develop new practices (Galdin-O'Shea, 2015; Brown and Flood, 2019; Brown, 2020). Linked to the issue of time, however, is that schools in England are typically characterized by action orientated cultures, which serves to hinder processes that take place over the mid to long term, such as research inquiry cycles (Cain et al., 2019; Mintrop and Zumpe, 2019). Related is research on educational organizations in the tradition of institutional theory (e.g., Honig, 2006); with this arguing that, when seeking to solve their problems, educators often privilege legitimacy: i.e., acting according to public expectations of what is appropriate over evidence effectiveness (Mintrop and Zumpe, 2019). In high autonomy/high accountability systems such as England, this notion of legitimacy tends to relate to the twin forces of government accountability and performativity.

At the same time, it is also clear that if teachers are to use research to promote inclusive education, then, as well as the RIEP-related issues outlined above, teachers and school leaders must also see merit in this form of education (which may prove a source of tension in high autonomy/high accountability systems). In other words, they must see value in the unique contributions that students of all backgrounds offer and want diverse groups to grow side by side, to the benefit of all. Furthermore, as well as inclusion signifying to educators an ethical vision to aim for, teachers and school leaders must also embody the catalytic

behavior that can realize this change (Brown et al., 2021). This means educators need to be aware of the sociocultural context they operate in, have high expectations, a desire to make a difference, and are cognizant of the need to challenge the deficit mindset of colleagues. They may also need to identify the various means through which to overcome the professional antinomies often faced by those working in disadvantaged and challenging situations; including drawing on those holding 'local knowledge,' such as that of teaching assistants (Von Hippel, 2014; Lee and Louis, 2019; Brown et al., 2021). It is within this context, and toward the identification of such means, that educators are likely to direct their efforts at RIEP for inclusion.

For the purposes of this paper, we make the assumption that our work is for those who already have the ethical drive to pursue inclusive education. Our focus then is how this might be achieved in a research informed way. We note that there have already been a range of national and local initiatives which have attempted to address the separations between research and practice, which, in theory, should enable the achievement of research informed inclusive education to flourish. Most recently, these include the establishment of the Education Endowment Foundation (EEF): the 'what works' center for education in England, which provides freely available and accessible summaries of what works research-evidence for educators to use. In addition to this substantial investment, in 2014 the EEF launched a £1.4m fund for projects to improve the use of research in schools. This initiative was followed up in 2016 with the launch of the EEF's *Research Schools* initiative; schools charged with leading RIEP development in their local area. There has also been a substantial rise in bottom-up/teacher-led initiatives, such as the emerging network of 'Teachmeets' and 'ResearchED' conferences (Wisby and Whitty, 2017) designed to help teachers connect more effectively with educational research. Furthermore, a prominent example of a teacher-led initiative was the 2017 launch of England's Chartered College of Teaching: an organization led by and for teachers, and whose mission (in part at least) is to support the use of RIEP (Wisby and Whitty, 2017). RIEP is also increasingly promoted and supported at a government level. For example, England's Department for Education ensured the inclusion of references to RIEP within its standards for school leaders and in the pilot Early Career Framework for newly qualified teachers. Finally, the periodic Research Excellence Framework (the 'REF'), *via* which United Kingdom universities are funded, now requires them to account for the 'impact' their research has had on, "the economy, society, culture, public policy or services . . . beyond academia" (Higher Education Funding Council, England, 2011, p. 48). In other words, the government's aim is to use REF to encourage universities to ensure that their research is used in the world beyond academia, for example, by encouraging academics to work directly with teachers and schools (Cain et al., 2019). That the evidence-practice gap still exists, however, would seem to imply that these initiatives are not fully 'hitting the mark' and that there are, in fact, a range of factors preventing RIEP which are still unaddressed. This is clearly problematic if we wish teachers to engage with or develop 'research-informed' practices that support inclusive education. In response, the purpose of this paper is to use a novel theoretical perspective to attempt to uncover additional insights into why educators do or do not employ research evidence, and to provide practice and policy-recommendations as to how this situation can be improved.

BAUDRILLARD'S THEORY OF CONSUMPTION

Research in the area of RIEP has often been criticized for being 'under-theorized' (e.g., Nutley et al., 2007; Cooper and Levin, 2010; Brown, 2014). This is problematic to the extent that it may lead to researchers failing to consider, either comprehensively or with sufficient complexity, the full range of factors influencing the research-practice gap. To provide a theoretical basis for our analysis, we adopt Baudrillard's (1968) semiotic theory of consumption. This theoretic lens allows us to view the use of research-evidence by educators as being firmly situated within the overall culture of consumerism that encapsulates Western societies. As a social phenomenon, consumerism can be thought of as being 'formally' identified by Veblen (1899) in *The Theory of the Leisure Class*: here Veblen identified that, as well as a way of meeting needs, consumption also represents a means through which wealth can be displayed, in order to demonstrate social status. With Veblen, then, the notion of the consumer society – the society which consumes because it wants rather than needs to – was born. But while Veblen's analysis was ground breaking, in that it identified consumption as something which stretched far beyond subsistence, what it did not do was identify the myriad ways in which the leisure class might engage with what they buy, or the 'relationships' that might exist between consumer and consumed. Such a theory can be located in Baudrillard's (1968) *The System of Objects*. Here Baudrillard concerns himself with both consumer behavior and the 'objects' which are consumed: in other words, how objects are 'experienced' and what needs they serve in addition to those which are purely functional. Here Baudrillard (1968) utilizes semiotic analysis to contend that all consumer goods in fact possess three values. Specifically, these are: (i) their 'benefit' value, which corresponds to the utility that can be derived from a good; (ii) their 'cost' value which represents what it takes to consume a specific good; and (iii) and the value of the good as a 'sign.' In other words, what messages an act of consumption is signifying both to the consumer in question and to others.

We argue that employing Baudrillard's theoretical frame as a deductive lens for examining teachers' use of research-evidence is warranted for three reasons. First, it makes intuitive sense that, as with any other consumer object, any educator's use of research will be a function of some combination of the following three factors:

(1) The benefits associated with using academic-research: here, using Baudrillard's framework, the key question facing educators is whether using research-evidence is likely to have positive benefits for their leadership, their teaching practice or their professional learning. Furthermore, whether any perceived benefits are likely to be higher or lower than other means of improving their leadership, practice or professional learning. For instance, in relation to the benefits associated with professional

development courses, from engaging with trusted colleagues, or those that can be accrued from using social media.

(2) The costs associated with using academic-research: research-use costs can be manifold and relate not only to money (e.g., in instances where research can only be accessed via subscription or payment), but also in relation to the time involved in searching for, engaging with and acting on research-evidence. Costs can also relate to the mental costs associated with research-use: which can be a cognitively challenging process. As with benefits, Baudrillard's framework views such costs are relative to the costs of engaging with other forms of information, which may be cheaper, easier to find, quicker to engage with or easier to understand. Costs are also perceived in terms of whether they are likely to outweigh the benefits that might accrue from evidence-use.

(3) The signification associated with using academic research: Baudrillard's notion of signification, as applied to this study, corresponds to the extent to which research-use is perceived by educators as desirable. This type of desirability differs from any benefits associated with research-use. Rather, desirability refers to specific actions or behaviors that one wants to be associated with. With consumer objects such as coffee makers or clothes, desirability often comes from perceptions associated with a given brand. In other words, we typically want to purchase an object of a given brand because of the caché it affords us (especially when hold benefits and costs constant). For research-use, desirability concerns the extent to which one wants to be associated with the act of engaging with academic research. Such desirability could be a function of whether an educators' colleagues expect them to behave in this way, but equally, it could be that engaging with research provides teachers with a positive sense of professional identify: in other words, the desirability in question is internally motivated.

As well as making intuitive sense, our *second* reason for adopting Baudrillard's theoretical frame is that it provides a clear focus for investigating what might be causing the research-practice gap, as well as guide the development of possible interventions for closing it. In other words, the framework enables us to ask whether the research-practice gap is caused by educators failing to perceive the benefits of engaging in RIEP; from educators believing that the costs involved with research-use are too high; or from RIEP-type activity not being sufficiently desirable for them to want to engage in it (or, more likely, some combination of all of these factors).

Third, Baudrillard's frame also appears to fit the available evidence. We illustrate this using a thematic analysis of recent empirical studies that have examined educators' use of academic research. Recent work in this area has involved a range of methods and analysis, from qualitative exploration, to the use of surveys to examine behaviors on a larger scale; with each study reporting on key research-use barriers and enablers. As can be seen in **Table 1**, below, the factors identified from these studies, all comfortably sit within one of the three headings of 'benefit,' 'cost,' or 'signification.' Furthermore, we are yet to identify a single research-use factor from the vast corpus of research examining research-use, knowledge mobilization, close to practice research, evidence-informed practice, as well as a range of related fields, that does not correspond to one of these three themes. At the same time, however, no studies appear to have quantitatively measured all of these factors simultaneously, nor used statistical modeling approaches to ascertain each factor's relative importance. This means we have no firm understanding regarding which factors are more or less likely to either positively or negative impact on educators' research-use.

RESEARCH QUESTIONS, METHODS, AND ANALYSIS

Above, we identified that a major knowledge gap is a comprehensive understanding of the relationship between the educators' reported use of research, and the benefits, costs and signifying factors they associate with research-evidence. As such, the research questions we now address in this paper, in order to increase the likelihood that research-informed educational practices for inclusion are developed, are as follows:

- RQ1: What potential benefit, cost and signification factors can be identified that might account for the current research-practice gap?
- RQ2: Which individual and combinations of benefits, cost and signification factors appear to be most closely associated with educators' use of research evidence?
- RQ3: What implications emerge for policy and practice in terms of how to increase educators' use of research-evidence, so leading to more effective inclusive practice?

Survey Development

A survey methodology was used to address these questions. To develop the survey and address RQ1, the research team first reviewed recent literature (broadly 2010 and later) that generally encapsulated the area of RIEP (e.g., research on research-use, knowledge mobilization, close to practice research, research on evidence-informed practice, and so on). The aim of this review was to identify as many of the factors associated with the barriers to and enablers of RIEP as possible. Where this literature was empirically based, we attempted, where feasible, to adopt the questions and scales used by these studies. When the literature was non-empirical, we identified key ideas and themes from these papers and used these to develop survey question items. All survey question items were then organized according to whether they represented the benefits, costs or any signification associated with RIEP. The research team (comprising two experienced professors, one post-doctoral researcher, who is also an experienced educator, and one experienced educator undertaking a PhDs in this area), also brainstormed other possible benefit, cost and signification related reasons that might influence RIEP. Survey question items were then also developed to represent these ideas. In order to ascertain the relationship between the benefit, cost and signification (BCS) factors and the reported use of research, scales were also developed to explore if and/or how educators used research to improve their practice and professional learning. We also developed questions to examine other possible sources for practice development (such as courses,

TABLE 1 | 'Benefits,' 'costs,' and 'signification' associated with research-use, identified from current research literature.

Benefit	Cost	Signification
Teachers' beliefs as to whether research can have a positive impact on their practice (Joram et al., 2020; Brown and Malin, 2022)	Teachers knowing where to find relevant research that may help to inform teaching practice (Walker et al., 2018)	Perceptions regarding whether academic researchers are expert authorities in relation to education (Joram et al., 2020)
Perceptions as to whether research provides more authority or credibility (or not) than teachers' own opinion (Joram et al., 2020)	Teachers knowing who to go to in their school for support on accessing or using research evidence (Coldwell et al., 2017; Walker et al., 2018; Rickinson et al., 2020)	Whether there is an expectation in schools that teachers should engage with research to improve practice (Brown and Flood, 2019; Joram et al., 2020). Similarly, the incentives or motivational structures for teachers to use research (Cain, 2015)
Teachers' beliefs as to whether research from other settings can apply to their students (Cain, 2015; Walker et al., 2019; Joram et al., 2020; Rickinson et al., 2020; Brown and Malin, 2022)	Schools not making time available for staff to use a variety of information sources (Walker et al., 2018; Brown et al., 2020; Rickinson et al., 2020)	The notion that research-use is the 'hallmark' of an effective profession (Wyse and Torgeson, 2017)
Teachers' beliefs as to whether research can provide certainty and concrete solutions (Biesta, 2007; Nelson and O'Beirne, 2014; Wisby and Whitty, 2017; Wrigley, 2018; Wiggins et al., 2019; Joram et al., 2020)	Teachers having a good understanding of research methods (Royal Society for the Encouragement of the Arts, Manufacturing and Commerce (RSA), 2014; Joram et al., 2020; Rickinson et al., 2020)	Whether teachers support the implementation of school-wide policy change without research to support it (Brown, 2017)
Teachers' beliefs as to whether research can inspire new ideas for how to improve practice (Coldwell et al., 2017; Walker et al., 2019; Rickinson et al., 2020)	Teachers knowing how to access published peer reviewed articles (Royal Society for the Encouragement of the Arts, Manufacturing and Commerce (RSA), 2014; Joram et al., 2020; Rickinson et al., 2020).	School leaders treating research engagement as a priority (Brown and Flood, 2019)
Whether teachers have found information from research-evidence, useful in applying new approaches in the classroom (Brown, 2017; Walker et al., 2019)	Teachers being physically able to access published peer reviewed articles (for example whether they can log in to research databases) (Joram et al., 2020)	Whether research is perceived as valuable as professional expertise (Brown and Rogers, 2015; Cain, 2015; Wyse and Torgeson, 2017; Gu et al., 2019)
If teachers believe that research-use can lead to improved teaching practice (Brown, 2017; Rickinson et al., 2020)	Teachers feel confident to judge the quality of research articles (Brown, 2017; Joram et al., 2020; Rickinson et al., 2020)	Teachers believing they would be more likely to engage with research findings if they are presented to them by their school leader (Brown et al., 2018)
If teachers believe that research-use can lead to improved student outcomes (Brown, 2017; Rose et al., 2017; Mintrop and Zumpe, 2019)	Whether teachers are likely to try new approaches to teaching and learning in situations of high stakes accountability (Brown, 2017; Joram et al., 2020)	Teachers believing they would be more likely to engage with research findings if they are presented to them by a trusted colleague (Brown et al., 2018). Likewise, teachers believing they would be more likely to use research if their colleagues are also using research (Brown et al., 2018)
The extent to which educators seek our research to use in a confirmatory manner to support existing views (Mintrop and Zumpe, 2019)	Whether the language of academic research is accessible to and can be understood by practitioners (Joram et al., 2020).	Teachers believing they would be more likely to use research if their school leader wants them to Brown et al. (2018)
Perceptions as to whether research-use can expand, deepen and clarify teachers' own concepts (Brown and Flood, 2018; Rickinson et al., 2020)	Whether teachers believe it is difficult to know how to directly apply the findings of academic research to their practice (Brown and Rogers, 2015; Hubers, 2016; Morton and Seditas, 2016)	Whether research-use is associated by teachers with performativity, accountability and managerialism (Brown, 2017)
Perceptions as to whether there is quality/relevant evidence produced by researchers for teachers (Gorard et al., 2019). Likewise, that the perspectives underpinning the research are relevant to the users of the research (Gough, 2021)	Teachers being able to access research through websites such as the Education Endowment Foundation's Toolkit; the What Works Clearing House and trough organizations such as the Chartered College of Teaching (Cain, 2015; Brown, 2018)	Perception that the best school systems in the world are research-engaged (Brown, 2017). Likewise, perceptions that research-use bolsters institutional reputation and attractiveness as a place to learn, work, and invest (Godfrey, 2016; Gu et al., 2019)
Perceptions as to the complexity of the research-use process and the level of support that may be required (See et al., 2016)	Whether teachers believe there are trusted sources of research they can access (Cain, 2015; Gorard et al., 2019)	Educator perceptions that a research-use culture indicates the presence of reflective, empowered teachers who constantly improve their practice (Handscomb and MacBeath, 2003; Brown, 2017)

newsletters, publications from membership bodies, the use of social media, advice from colleagues etc.). Questions were also developed to examine the culture of respondents' schools in terms of the factors associated with practice development and learning generally. For instance, the presence of cultures of trust, as well as instances of innovation, risk taking and experimentation (Brown et al., 2016; Kools and Stoll, 2016). Finally, we developed questions to capture socio-demographic information, including respondent's levels of education, their experience, their role and about the context of the school in which they work.

To reduce the likelihood of measurement error and establish initial support for the validity of the questionnaire, we then completed a comprehensive three stage review process. The first stage involved two rounds of *ex ante* item review (known as item pretesting). In the first round, we made use of Graesser (2006) *Question Understanding Aid* web-based program, which takes individual questionnaire items as input and returns a list of potential problems, including unfamiliar technical terms, unclear relative terms, vague or ambiguous noun phrases, complex syntax, and working memory overload. As the program itself is strictly diagnostic, the research team systematically screened the output for each item and, as a team, determined any necessary revisions. In the second round, we used Willis and Lessler's (1999) *Questionnaire Appraisal System* to individually screen each questionnaire item for any further issues, such as with instructions and explanations, clarity, assumptions made or

underlying logic, respondent knowledge or memory, sensitivity or bias, and the adequacy of response categories. Here the research team compared individual findings and determined whether any additional changes were necessary.

For the second stage, cognitive interviews were held with one school leader and two teachers. During the interviews, respondents were asked to work their way through the questionnaire and describe what they thought each survey item was asking them to consider. Respondents were also asked to highlight any language or comprehension issues. Finally, expert interviews were held with three independent academics with substantive experience of research in the area of RIEP. For this final stage, expert respondents were asked to consider whether the survey comprehensively covered the key issues associated with RIEP and to highlight possible gaps. Respondents were also asked to consider face validity and to give their opinion on whether survey items were measuring what the research team intended them to measure, as well as assess the overall suitability of the framework for addressing the problem in hand. All feedback from stages two and three was incorporated into the design of the survey. The final version of the survey (which we have entitle the 'Research-Use BCS survey') can be found in the **Supplementary Material**.

Our efforts to ensure a rigorous questionnaire development procedure are noteworthy given the mounting evidence that few measures related to research-use have been developed with attention to their psychometric or pragmatic qualities (e.g., Asgharzadeh et al., 2019; Lawlor et al., 2019). When a measure lacks a strong theoretical and empirical basis, it cannot necessarily be assumed that the inferences and actions that emerge from its use are adequate or appropriate (Messick, 1995). Too often, disproportionate emphasis is given to supplying evidence on validity at the back-end of instrument development (i.e., after pilot data has been collected) through methods such as factor analysis and reliability analysis (Gehlbach and Brinkworth, 2011). While such evidence is important, it is only one component of the full picture. Our focus on the front-end of instrument development (*ex ante* item review, cognitive interviews, and expert review) has thus helped ensure that interpretations following from responses to our questionnaire are grounded in a sound scientific basis.

Sampling Strategy

The aim of our sampling strategy was to achieve a representative sample of teaching staff in England, both in terms of their own individual characteristics, as well as the characteristics of the schools they work in. To identify teacher characteristics, we drew on the Department for Education's school workforce briefing note and associated data tables. Here the latest data available at the time of the analysis (November 2018: see Department for Education, 2019a) shows that of the 499,972 full time equivalent (FTE) teachers in England, 24 percent were male while 76 percent were female. Male teachers overwhelmingly work in secondary schools (65 percent vs. 30 percent who work in primary schools, while 5 percent work in special or alternative provision). For female teachers the opposite is true: 58 percent of female teachers work in primary schools, 37 percent work in secondary schools (with 6 percent of female teachers working in special or alternative provision). This picture changes somewhat for teaching assistants (TAs) however: here 43 percent of male TAs and 74 percent of female TAs work in primary; 33 percent of male TAs and 14 of female TAs work in secondary schools; while 24 percent of female and 13 percent of male TAs work in special or alternative provision. Furthermore, the vast majority of teaching staff are classroom teachers (85 percent when just considering teachers, middle leaders and school leaders and 53 percent when considering the wider teaching workforce, including teaching assistants).

Whether teaching workforce is part time or full time can impact on research-engagement, with RIEP tending to be a behavior more associated with full time teachers/teaching assistants (Brown, 2020). According to the Department for Education's school workforce briefing note and associated data tables, the majority of teaching staff are full time, although this increases with seniority: while only five percent of school leaders are part time, more than a quarter (26 percent) of classroom teachers are part time. For TAs, meanwhile, the vast majority (85 percent) work part time. There has been no analysis associating research-use with the age of teachers, although from various analyses – (e.g., Rogers, 1995; Hargreaves and Fullan, 2012) which examine the diffusion of innovations and the likely adoption of new ideas by teachers – it can perhaps be inferred that younger teachers may well be more enthusiastic about engaging with new ideas, such as those represented in research studies. Interestingly Department for Education data indicates that the teaching workforce in England is relatively young, with some 57 percent of teachers aged under 40. Finally, Department for Education data (Department for Education, 2019a) indicates that 99 percent of all teachers are educated to degree level. No detail is provided, however, on post graduate qualifications such as Masters of PhDs which might well be expected to positively impact on the teachers' engagement with research (Malin et al., 2019).

In terms of school characteristics, as well as ensuring that the sample was generally representative of England's total population of schools: for instance, in terms of school type and geographic location, we also wanted to ensure the sample mirrored those school level characteristics thought to impact on teachers' research engagement, such as school inspection outcomes. To identify key school level characteristics, we first drew on the Department for Education's annual schools briefing note and associated data tables. For January 2019 (Department for Education, 2019b) this showed there were a total of 24,323 schools in England. The main attributes of these schools and their pupils is set out in **Table 2**, below:

The first column in **Table 2** provides the distribution of schools by school type. There is some indication that school phase impacts on research-use, although this picture is not necessarily clear cut (e.g., Coldwell et al., 2017). The final three columns of this table look at pupil characteristics and provide an indicator of the nature and diversity of the school intake. We are unaware of any analysis linking measures of the disadvantaged or diverse nature of a school's intake with teachers' engagement with research evidence. In theory, any cohort that is relatively more complex might engender higher levels of research-use

TABLE 2 | Characteristics of schools in England and their pupil intake.

School type	Total number	Academy and free schools	Pupils eligible for and claiming free school meals	Pupils from minority ethnic origins	Pupils with english as an additional language
State-funded nursery	391	n/a	6.6%	48.5	29.7
State-funded primary schools	16,769	5,350 (32%)	15.8%	33.5%	21.2%
State-funded secondary school	3,448	2,589 (75%)	14.1%	31.3%	16.9%
State-funded special schools	1,044	331 (32%)	37.4%	29.5%	14.7%,
Alternative provision	352	128 (36%)	42.5%	26.7%	7.7%,
Independent schools and non-maintained special schools	2,319	n/a	n/a	n/a	n/a
Total	**24,323**	**8,398 (35%)**	**15.4%**	**32.6%**	**19.4%**

'n/a' indicates data not available or not applicable.

as teachers seek to find ways to improve their effectiveness. Alternatively, teachers may find themselves so mired in the day-to-day activity of teaching diverse or disadvantaged groups that they are unable to find additional time, energy or resource to seek out research evidence. Examining this data as part of our analysis will therefore provide additional insight into the extent to which school intake helps or hinders research-engagement. Our approach to sampling also took into account the percentage of schools that are currently academies or free schools (which comprise 32% of primary schools and 75% of secondary schools). This is relevant, since, as schools operating outside of Local Authority funding and control, academies and free schools have certain freedoms to innovate and are expected to use such freedoms to improve teaching and learning – such as through engaging with research-evidence (Brown and Greany, 2017; Coldwell et al., 2017; Brown, 2019).

We also wished to ensure our sample mirrored the national distribution of school inspection ratings, (with school inspections undertaken by OFSTED, England's school inspection agency). Such data is also relevant to our analysis, since there is some indication that schools tend to be more likely to engage with research evidence if they have been categorized as 'good' or 'outstanding.' This is because such a rating affords schools the freedom to experiment with potentially risky ways to improve further (alternatively, it could be that such schools are outstanding because they have been so in successful in embedding a culture of inquiry and experimentation). This stands in contrast to 'inadequate' or 'requires improvement' schools, which are regarded as being more likely to stick to what they feel are 'safe' or 'tried and tested' means of achieving improvement, including narrowing the curriculum to focus on English and Maths and on ensuring pupils achieve well in progress tests in these two subject areas (Coldwell et al., 2017; Greany and Earley, 2018; Ehren, 2019).

Attaining the Sample

As no database of teachers exists it is not possible to sample at a teacher level. As such, we derived our sample at a school level, using England's Department for Education's https://get-information-schools.service.gov.uk/Downloads website, which provides a downloadable database of all schools in England. This database was used (after removing records for schools that were closed, proposed to close or not yet open) to provide a randomly selected sample of ten percent of all schools in England (2,424 schools). As you would expect, the characteristics of this random sample mirrored those of the school population described above. Having identified our sample, we then located the email addresses of either the school leader or school gate keeper and emailed them a link to the survey, asking them to distribute this link to all teaching staff (school leaders, teachers, and teaching assistants). Follow up emails were sent 1 month after the first. Overall response to the survey was relatively low (147 teachers, or 6.1 percent); nonetheless schools were facing unprecedented challenges due to the global COVID-19 pandemic during the period of our fieldwork. Correspondingly we did not feel that further follow-up was ethically justifiable. We also believed that the sample was sufficient to provide some initial insight and could be followed up with further surveying at a later point.

The Representativeness of the Sample

At the same time, not only was the response rate low, but 30 percent of these responses included missing data. To explore the representativeness of the sample, therefore, it was decided to make the categories broader, so as to ensure individual categories were larger and so comparable (for example the age category was reduced to just two categories -under 45 and over 45 rather than the original five in the survey). Once these categories were collapsed the survey data was compared with National data from the Department for Education data (Department for Education, 2019a) (see **Table 3**). Furthermore, as well as broadening the categories, percentages from the survey data were calculated from the response rate for each question rather than the return rate as a whole (147), thus accounting for (by removing) the unknown data.

In addition to the missing survey data there were other apparent limitations from the sample when compared with the national data. For example, the responses showed a significant

TABLE 3 | Comparison of National data (2019) with Survey data.

Category	National data	Survey data
Staff type:		
Senior/middle leader	10%	54.5%
Teacher	53%	14.3%
Teaching assistant	37%	0.7%
Unknown/other	0	30.7%
Employment status:		
Full time	76%	61.9%
Part time	24%	9.5%
Unknown/other	0	29.3%
Age:		
Under 45	70%	54.4% (Mean)
Over 45	30%	9.37 (SD)
Qualification:		
Degree level	99%	99.3%
Masters or above	n/a	56.4%
Unknown/other	n/a	32%
Gender (FTE):		
Male	24%	19%
Female	76%	51.6%
Unknown/other	0	4.8%
School type:		
State maintained (all phases)	67%	25.8%
Academy	26%	29.9%
Independent	7%	8.8%
Unknown/other	0	35.4%
OFSTED category:		
Outstanding/good	86%	54.4%
Requires improvement/inadequate	14%	4.8%
Unknown/other		39.1%
Location:		
Northern England (including NE/NW/Yorkshire)	29%	19.7%
Midlands (including East Mids/West Mids/East of England)	31%	16.8%
London (Inner and Outer)	13%	8.2%
Southern England (including SE/SW)	27%	25.1%
Unknown/other	0	30.6%

over representation of senior and middle leaders (54.5 percent in the sample vs. 10 percent overall). Likewise, there were less staff employed in state schools than the national average and less in Northern England and the Midlands.

Data Analysis

Given the response rate and resultant sample size obtained in this study, it was not possible to conduct a multivariate analysis of research use. Instead, to address RQ2 ("Which individual and combinations of benefits, cost and signification factors appear to be most closely associated with educators' use of research evidence?"), we examined descriptive statistics and correlations alongside univariate classification tree models (produced using SPSS 26). The first step in this process involved exploratory factor analyses for each category of predictor variables. Factors were extracted using principal axis factoring (Fabrigar et al., 1999) and, given the potential for correlation between factors in the same predictor category, an oblique rotation (direct quartimin) was used to clarify the factor structure (Costello and Osbourne, 2005): see the **Supplementary Material** file for more detail on this process. Following the exploratory factor analyses, descriptive statistics were calculated for all items and factor scores, and internal consistency of each factor was determined using Cronbach's alpha. The strength and direction of the linear relationship between factors was calculated using Pearson product-moment correlations.

In preparation for the classification tree analyses, responses to the dependent variable representing *individual-level use of research* were dichotomized at the median value into 'use' (N = 75) and 'non-use' (N = 72). These categories correspond, respectively, to educators who were self-assured about their use of research knowledge and those who were comparatively unsure. A chi-square automatic interaction detection (CHAID) algorithm was then used to construct classification trees for each category of predictor variables. One of the most common types of decision tree algorithms, CHAID is a non-parametric approach for recursively partitioning responses to the dependent variable into subgroups (nodes) of the independent variables that maximize homogeneity (Milanović and Stamenković, 2016). Beginning with a single unsorted group of data, the algorithm creates a hierarchically arranged set of nodes by applying "if then" logic to determine the optimal number of partitions for each independent variable (see Kass, 1980). Central to the logic operations is the use of chi-square tests to determine split points for each independent variable, creating different branches of the classification tree. The overall sequence of independent variables follows in order of strongest to weakest significant association with the dependent variable. When the CHAID algorithm reaches a point at which further splits are not statistically significant. The result – called a terminal node – provides a predicted value for the dependent variable given the values for the independent variables in each node of the respective branch.

FINDINGS

We begin the analysis with our initial descriptive analyses and correlations. These can be found in **Table 4**, below. Beginning with the factors describing research-use (R1 – R3), respondents most strongly felt that research-use formed a part of their individual professional practice (M = 3.23, SD = 0.68). By contrast, respondents were less affirmative about the extent to which their schools and colleagues were using research to inform practices. In terms of the benefits of research-use factors (B1 and B2), respondents were largely in agreement that using research could improve teaching and learning by, for example, providing new ideas, guiding the development of new teaching practices, and promoting improved student outcomes. Similarly, respondents did not generally agree with statements which suggested research conferred no benefits (for instance, in terms of strength of agreement in relation to the question: "research evidence can't provide me with concrete solutions"). Broadly,

TABLE 4 | Descriptive statistics of the research-use factors.

Abbreviation	Factor	Mean (*SD*)	Cronbach's α
R1	Leadership for school improvement	2.66 (0.85)	0.879
R2	Individual-level use of research	3.23 (0.63)	0.850
R3	Joint efforts for school improvement	2.59 (0.76)	0.834
B1	Improves teaching and learning	4.40 (0.45)	0.827
B2	No benefits to teaching and learning	4.16 (0.76)	0.639
C1	Social relations	3.82 (1.27)	0.944
C2	Access to research	3.73 (1.07)	0.618
C3	Understanding of research methods	3.87 (0.94)	0.771
C4	Ability to connect research to practice	3.04 (0.74)	0.608
S1	Becoming a norm	3.45 (0.80)	0.781
S2	Indicator of successful teachers and schools	3.85 (0.82)	0.761
S3	Outcome of local organizational and social influence	3.24 (0.98)	0.719

The Dimensions of Research-use factors (i.e., R1, R2, and R3) were scored on a 4-point Likert scale; all other factors were scored on a 5-point Likert scale.

respondents also disagreed that potential costs associated with research were sufficient to discourage its use. The perceived cost most likely to influence use, concerned respondents' ability to connect research with tangible changes to practice (M = 3.04, SD = 0.74; e.g., that, "Research evidence needs to be 'translated' and made practitioner friendly if I am to use it effectively"). However, response variance was greatest for whether respondents had access to research knowledge (M = 3.73, SD = 1.07) and whether there was social support for research-use in their schools (M = 3.82, SD = 1.27). That is, responses suggest a gulf between educators who worked in environments that provided access and support for research-use and educators who were largely unsure how to access research knowledge and felt unsupported in changing this situation. Turning finally to the signification factors, respondents were generally neutral about the extent to which research-use was becoming a norm (M = 3.45, SD = 0.80), an indicator of successful teachers and schools (M = 3.85, SD = 0.82), and an outcome of local organizational and social influence (M = 3.24, SD = 0.98).

Table 5 presents the Pearson product-moment correlation for each pair of factors. Although multiple correlations were statistically significant, only five could be considered strong ($|r| > 0.50$). The first of these suggested a positive relationship between respondents' perceptions of their schools' organizational climate of innovation (R1) and the extent to which they experienced joint efforts for school improvement (R3). Notably, however, neither of these factors were associated with individual-level research-use. Rather, whether respondents were engaging in research-use (R2) appeared closely related to their perceptions that using research can improve teaching and learning (B1). Shifting to the signification factors, the extent to which respondents believed research-use was becoming a norm (S1) was strongly associated with their schools' social environment, in terms of both the existence of joint efforts for school improvement (R3) and whether they possessed the social relations that could support research-use (C1). Finally, respondents' belief that research-use is an indicator of successful teachers and schools (S2) was linked to their belief that research-use improves teaching and learning (B1).

Decision Classification Trees

As indicated earlier, the CHAID classification tree algorithm was used for each category of factors: benefits (B1 and B2), costs (C1, C2, C3, and C4), and signification (S1, S2, and S3), using individual-level research-use (R2) as the dependent variable. As previously mentioned, only these factors were included in this exploratory analysis, as the sample size did not permit including

TABLE 5 | Correlations among research-use factors.

	Correlation matrix										
	R1	**R2**	**R3**	**B1**	**B2**	**C1**	**C2**	**C3**	**C4**	**S1**	**S2**
R1											
R2	0.265*										
R3	0.674**	0.272**									
B1	0.148	0.560**	0.163								
B2	−0.007	0.184	0.016	0.219*							
C1	0.433**	0.213*	0.443	0.258**	−0.005						
C2	0.033	0.414**	0.076	0.460**	−0.009	0.382**					
C3	0.010	0.352**	0.008	0.267**	−0.010	0.188*	0.475**				
C4	0.188*	0.349**	0.077	0.290**	0.443**	0.058	0.202*	0.236*			
S1	0.494**	0.283**	0.547*	0.364**	−0.008	0.534**	0.287**	0.172	−0.024		
S2	0.107	0.402**	0.194*	0.514**	0.128	0.155	0.338**	0.138	0.238*	0.396**	
S3	0.128	−0.181	0.308**	0.058	−0.133	0.226*	0.021	−0.116	−0.363**	0.391**	0.144

*$p < 0.05$, **$p < 0.01$.

TABLE 6 | Overall case classification prediction accuracy and risk.

Observed	Predicted		Percent correct
	Non-use	Use	
Benefits of research-use factors (one layer)			
Non-use (*N* = 72)	57	15	79.2%
Use (*N* = 75)	30	45	60.0%
Overall percentage	59.2%	40.8%	69.4%
Risk (*SE*)	0.306 (0.038)		
Costs of research-use factors (three layers)			
Non-use (*N* = 72)	59	13	81.9%
Use (*N* = 75)	31	44	58.7%
Overall percentage	61.2%	38.8%	70.1%
Risk (*SE*)	0.299 (0.038)		
Signification of research-use factors (two layers)			
Non-use (*N* = 72)	58	14	80.6%
Use (*N* = 75)	36	39	52.0%
Overall percentage	63.9%	36.1%	66.0%
Risk (*SE*)	0.340 (0.039)		

demographic variables, such as educational qualifications or school type. **Table 6** presents the prediction accuracy and risk of respondent misclassification for each category; the former represents the percentage of correctly identified respondents (i.e., use or non-use) in the terminal nodes of each classification tree model, while the latter represents the probability that a respondent chosen at random would be misclassified by the respective model. What stands out in this table is that each predictor category was approximately equally accurate, with cost factors most accurately predicting non-use and benefits factors most accurately predicting use. The model for each predictor category will now be examined in turn.

Benefits

Modeling individual-level research-use (R2) based on perceived benefits yielded a one-layer classification tree that correctly classified non-use for 79.2% of respondents and use for 60.0%. Of the two predictors, only the factor corresponding to respondents' belief that using research can improve teaching and learning (B1) was statistically significant, $\chi^2(2) = 27.72$, $p < 001$, $r_{pb} = 0.397$. This factor was split into three nodes (see **Figure 1**, below), each with a specific range of values and a terminal classification. Nodes 1 and 2 (non-use) together contained respondents who did not strongly agree ($M \leq 4.43$) on the benefits of research-use, while Node 3 contained respondents who strongly agreed ($M > 4.43$) that research can, for instance, guide the development of new teaching practices, provide new ideas and inspiration, and deepen and clarify understandings of teaching and pedagogy. In other

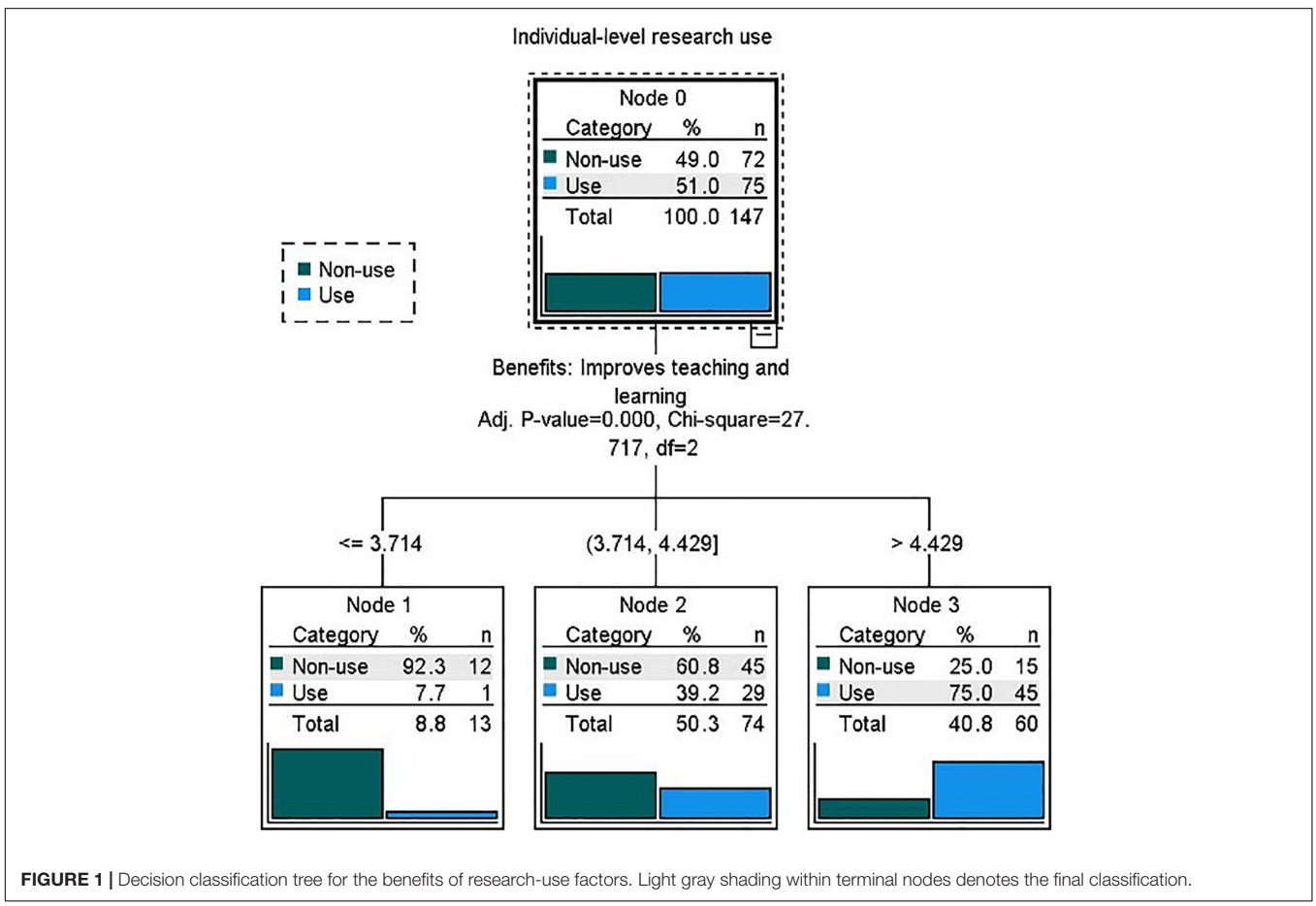

FIGURE 1 | Decision classification tree for the benefits of research-use factors. Light gray shading within terminal nodes denotes the final classification.

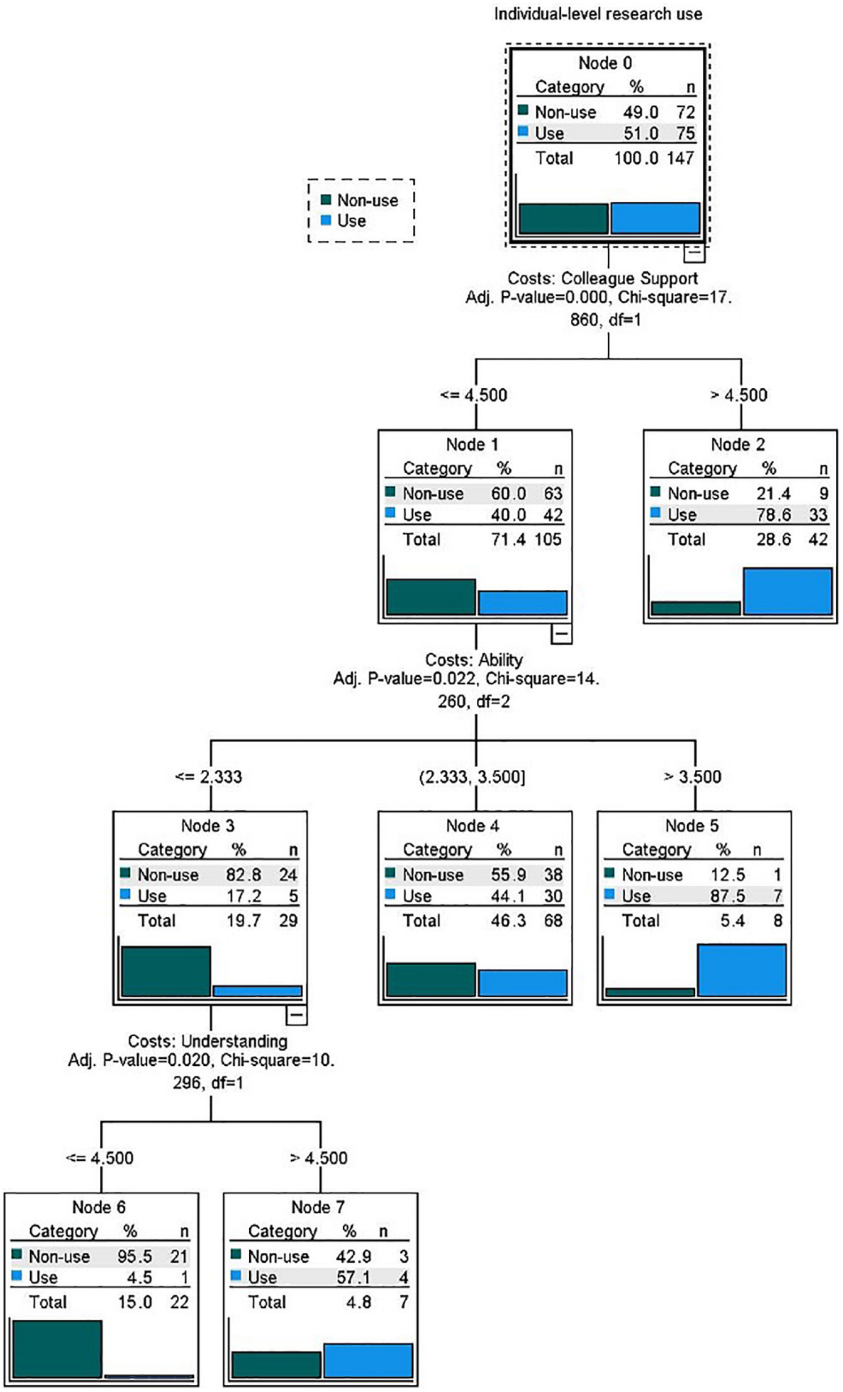

FIGURE 2 | Decision classification tree for the costs of research-use factors. Light gray shading within terminal nodes denotes the final classification.

words, this association suggests that for educators to engage in research-use, they need to see its benefits in practice.

Costs

Modeling individual-level research-use (R2) based on perceived costs yielded a three-layer classification tree that correctly classified non-use for 81.9% and use for 58.7% of respondents. As illustrated in **Figure 2**, the most significant predictor of use was respondents' belief that they possessed the social relations needed to support research-use (C1), $\chi^2(1) = 17.86$, $p < 001$, $r_{pb} = 0.205$. At this first layer of the classification tree, the model sorted respondents into either Node 2 (use) if they strongly agreed ($M > 0.4.50$) that they had the necessary social relations, or Node 1 if they were less assured ($M \leq 4.50$)

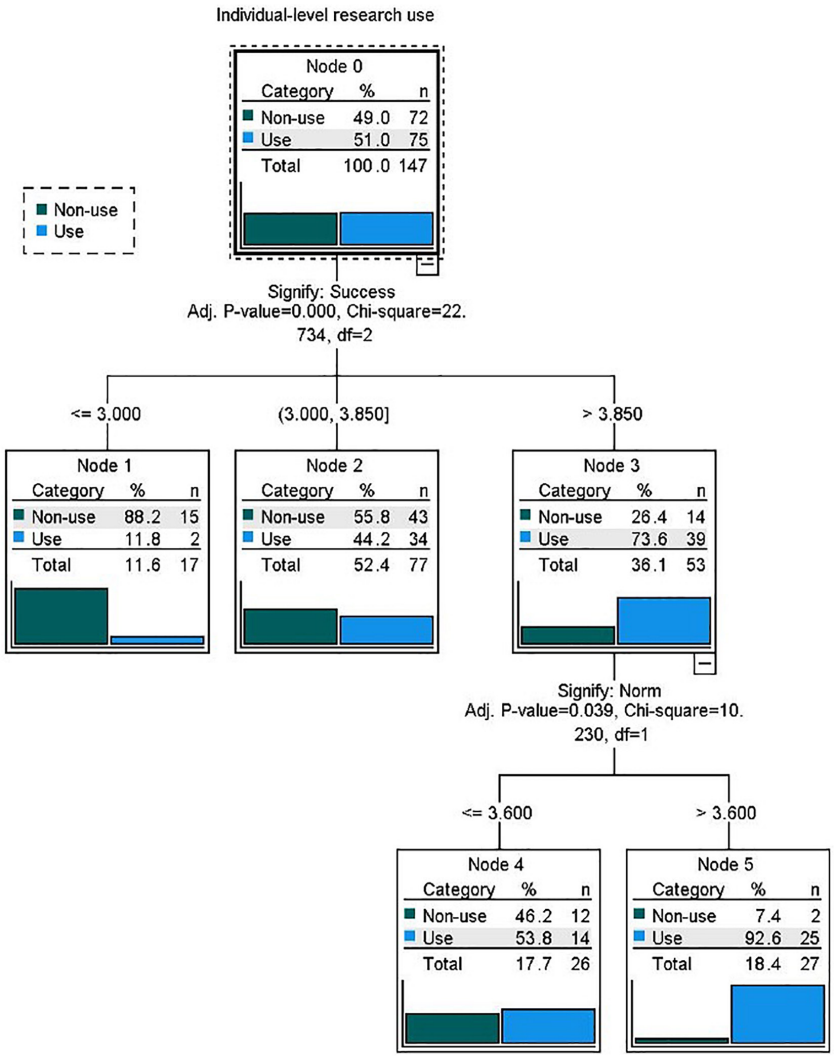

FIGURE 3 | Decision classification tree for the signification of research-use factors. Light gray shading within terminal nodes denotes the final classification.

about such relations. Branching from Node 1 was the second layer of the classification tree, splitting respondents into three groups based on their belief that they possessed the ability to connect research knowledge to practice (C4), $\chi^2(2) = 14.26$, $p = 0.02$, $r_{pb} = 0.220$. Node 5 (use) corresponded to respondents who agreed ($M > 3.50$) they had this ability combine their professional knowledge with research knowledge, whereas Node 4 (non-use) and Node 3 corresponded to respondents who were comparatively neutral or felt they did not possess this ability ($M \leq 3.50$) due to constraints, such as time and research needing to be translated by others. Branching from Node 3 was the third and final layer of the classification tree, which split respondents into two groups based on their reported understanding of research methods (C3), $\chi^2(1) = 10.30$, $p = 0.02$, $r_{pb} = 0.270$. Node 7 (use) contained respondents who strongly agreed ($M > 4.50$) they understood the strengths and weaknesses of different research methods and could judge the quality of research knowledge. Node 6 (non-use) contained respondents were comparatively less confident about their understanding in this area ($M \leq 4.50$).

Signification

Modeling individual-level research-use (R2) based on its perceived signification yielded a two-layer classification tree that correctly classified non-use for 80.6% of respondents and use for 52.0%. As can be seen in **Figure 3**, below, the most significant predictor of use was respondents' belief that research-use is an indicator of successful teachers and schools (S2), $\chi^2(2) = 22.73$, $p < 001$, $r_{pb} = 0.289$. At this first layer of the classification tree, the model split respondents into either Nodes 1 and 2 (non-use) if they were neutral or disagreed ($M \leq 3.85$) with the connection between research and successful education delivery, or Node 3 if they agreed ($M > 3.85$) that research-use is increasingly a hallmark of an effective profession and something that enhances a school's reputation and attractiveness as a place to learn and work. Branching from Node 3 was the second layer of the

TABLE 7 | Summary of case classification at terminal nodes.

Terminal node	Path	Classification	Number correct	Number incorrect
Benefits of research-use factors (one layer)				
1	Improves teaching and learning ≤ 3.71	Non-use	12	1
2	Improves teaching and learning (3.71, 4.43]	Non-use	45	29
3	Improves teaching and learning > 4.43	Use	45	15
Costs of research-use factors (three layers)				
2	Colleague support > 4.50	Use	33	9
4	Colleague support ≤ 4.50 → Ability (2.33, 3.50]	Non-use	38	30
5	Colleague support ≤ 4.50 → Ability > 3.50	Use	7	1
6	Colleague support ≤ 4.50 → Ability ≤ 2.33 → Understanding ≤ 4.50	Non-use	21	1
7	Colleague support ≤ 4.50 → Ability ≤ 2.33 → Understanding > 4.50	Use	4	3
Signification of research-use factors (two layers)				
1	Success ≤ 3.00	Non-use	15	2
2	Success (3.00, 3.85]	Non-use	43	34
4	Success > 3.85 → Norm ≤ 3.60	Use	14	12
5	Success > 3.85 → Norm > 3.60	Use	25	2

classification tree, splitting respondents into two groups based on their belief that research-use is becoming a norm in the field of education (S1), $\chi^2(1) = 17.86$, $p < 001$, $r_{pb} = 0.220$. Although both nodes were classified as use, Node 4 corresponded to respondents who were neutral or disagreed that teachers and school leaders are increasingly aware of and using research in their practice ($M \leq 3.60$), and Node 5 corresponded to respondents who agreed with this perspective ($M > 3.60$).

A summary of all terminal node classifications is presented in **Table 7**. Close inspection of this table in combination with **Table 6**, reveals that each model was more successful at correctly classifying respondents in the "non-use" category of R2 than those in the "use" category—evident, for instance, in the number of respondents predicted as non-use but observed as use. This result suggests that while non-use of research knowledge may be relatively straightforward to predict based on educators' beliefs about the benefits and costs of research-use as well as what it signifies, predicting use may be comparatively complex and dependent on the interaction of multiple factors.

DISCUSSION AND CONCLUSION

This study sought to understand educators' use of research relative to the benefits, costs, and signifying factors (Baudrillard, 1968) they associate with it. This understanding sits within an overall umbrella of seeking to improve the ability of educators to engage in effective inclusive practice. In undertaking our study, we first worked to develop and refine a survey instrument (the 'Research-Use BCS survey') that could uniquely and simultaneously measure these concepts. We undertook this work after thoroughly reviewing research-evidence use literature relative to Baudrillard's semiotic theory of consumption. We then administered our questionnaire using a sample of English educators and analyzed survey data mainly through the production of descriptive analysis and classification trees. This section focuses primarily on the meaning and implications of our results. Perhaps most importantly, these results collectively hint at what interventions and strategies might work (at least, in the English context) to enhance evidence use.

To begin with, the results from our survey appeared to provide intuitively correct findings relative to the benefits of research-use. Although we cannot determine the direction of causation, seeing benefits in research and engaging in research-use are closely linked; this finding is most evident when looking at the extremes present in the B1 factor score. If respondents see the benefits of research, they were likely to use it (with the converse also true). At the same time, however, there was another group in the middle, comprising individuals who were more undecided. While these individuals were more likely to be classified as non-users, this distinction was not necessarily clear-cut. This suggests other factors are also likely to explain their decision-making around research-use, something that we would be able to better identify with a larger sample size (which would enable us to produce further significant classification tree nodes).

We can also pick out several patterns in the classification of respondents based on their perceptions about the costs of research-use. First, if educators have the needed support of their colleagues, they are more likely to use research, a finding that coheres with the literature (e.g., Coldwell et al., 2017; Walker et al., 2018; Rickinson et al., 2020; – also see **Table 1**). However, when such collegial support is not available, respondents engaging in research-use tended to be those who either (a) believed they personally possessed the expertise required to connect research and practice; or (b) were confident in their understanding of research methods and quality: both human rather than social capital factors. Turning finally to the signification factors, the findings suggest that seeing research-use as an activity that successful teachers and schools engage in is associated with individual-level use. Here as well, however, the association was not unambiguous. Even when some respondents agreed with this linkage between research-use and professional success, they were less likely to engage in research-use themselves when it was not perceived as a norm among school leaders and their colleagues.

Looking at the positive or negative ends of each category of factors (benefits, costs, and signification), reasonable explanations can be developed to explain respondents' use or non-use of research. However, for the individuals who fall closer to the middle of each spectrum (e.g., Node 2 in **Figure 1**; Node 4 in **Figure 2**; and Node 2 in **Figure 3**), there are clearly complex decision-making processes at play including either combinations of these factors, or other predictors not included in these models (e.g., demographic variables). This point is also evident when inspecting the accuracy of the models, which highlights that 'non-use' is relatively straightforward to predict, while 'use' is a more complex phenomenon. Nonetheless our results are suggestive of potential interventions for enhancing the use of research-evidence use; which, in the context of this paper, may well lead to more effective inclusive practice. For example, our results suggest that increased support of school leadership for research-evidence use (see Brown and Malin, 2017) would move a substantial number of evidence non-users to users. Likewise, were research-use to become a norm in more work settings (which again implicates the role of school leaders, but might also be promoted via external entities or policies; MacGregor et al., 2022; see Brown and Malin, 2022), one could imagine enhanced research-use as a consequence. For example, improvements in the mediation space (e.g., better, more well-tailored externally-provided knowledge and a more accessible knowledge provider network) might serve to reduce certain typical 'costs,' making it easier to obtain relevant research-evidence when needed. As well, we imagine that interventions geared toward elevating the profile and stature of research (signification) might, in some cases, attend toward broadening or altering educators' understanding of what research is and what and how it can be helpful given one's particular context and interests (e.g., showing how it can illuminate one's thinking, can be carried out via participatory approaches, can be focused on enhancing equity and/or on producing counternarratives, and so on). Again, it might be possible for some professionals to make such a case and, in turn, improve the desirability of research-use for others. Related, these results have prompted us to envision a set of individuals who are apparently very close to becoming research users (e.g., analogous to 'undecided' or 'swing' voters), if only their environment were to slightly shift in favorable ways. Such individuals, for example, may already perceive benefits of research-evidence use, and merely need a bit more support around such work (e.g., more time together, better access, opportunities to discuss problems of practice and research in relation to these interests) to fully embrace it.

Although this analysis, for the most part, tends to cohere with what one might have been able to glean from the literature to date, we believe our research and its employment of Baudrillard's theoretical frame, does provide further clarity and focus with regards to potential points for intervention. For instance, it establishes (at least for this sample) the relative importance of benefits, costs, and signification for research-use and non-use. At the same time, however, the study does have certain limitations and delimitations. These are: (1) its focus on the English context; (2) the unrepresentative nature of its sample; and (3) the relatively small size of its sample. The first of these impact on our ability to generalize widely, while, the last two of these foreclose certain analytic possibilities, including the use of regression analyses and Structural Equation Modeling (the ability to create a model of logical casual relationships between variables). As such we recommend further research to collect the views of a greater number of teachers in England, as well as the use of the survey in additional contexts. Pursuing both avenues of investigation would help us understand the wider validity of the questionnaire, as well as provide a more representative set of responses (thus enabling generalizability). Furthermore, combined with different forms of statistical analysis, these approaches should mean that this tool should, in future, be able to provide a useful way of diagnosing areas of strength/promise regarding research-use, as well as potential areas of focus with an eye toward increasing such use in the development of effective educational practices in a given context (whether for inclusion or other areas of interest). As such, we will continue to search out approaches to using the survey to bring about more research-use (in integration with other key evidentiary forms) as educators make key educational decisions (Malin et al., 2020). We do so under the assumption that this is a sustainable and effective way to enhance teaching and learning.

DATA AVAILABILITY STATEMENT

The data analyzed for this study can be found at https://osf.io/p45nx/.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Durham University School of Education Ethics

Committee. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

CB: conceptualization, formal analysis, methodology, project administration, writing – original draft preparation, writing – review and editing. SM: data curation, formal analysis, investigation, methodology, and software. JF: project administration, writing – original draft preparation, writing – review and editing, project administration. JM: writing – review and editing. All authors contributed to the article and approved the submitted version.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/feduc.2022.890832/full#supplementary-material

REFERENCES

Asgharzadeh, A., Shabaninejad, H., Aryankhesal, A., and Majdzadeh, R. (2019). Instruments for assessing organisational capacity for use of evidence in health sector policy making: a systematic scoping review. *Evid. Policy* 17, 29–57. doi: 10.1332/174426419X15704986117256

Baudrillard, J. (1968). *The System of Objects*. London: Verso.

Biesta, G. (2007). Why 'what works' won't work: evidence-based practice and the democratic deficit in educational research. *Educ. Theory* 57, 1–22. doi: 10.1111/j.1741-5446.2006.00241.x

Biesta, G., Ourania, F., Wainwright, E., and Aldridge, D. (2019). Why educational research should not just solve problems, but should cause them as well. *Br. Educ. Res. J.* 45, 1–4. doi: 10.1002/berj.3509

Brown, C. (2014). *Evidence Informed Policy And Practice In Education: A Sociological Grounding*. London: Bloomsbury.

Brown, C. (2017). Further exploring the rationality of evidence-informed practice: a semiotic analysis of the perspectives of a school federation. *Int. J. Educ. Res.* 82, 28–39. doi: 10.1016/j.ijer.2017.01.001

Brown, C. (2018). *Improving Teaching and Learning in Schools Through the Use of Academic Research: Exploring the Impact of Research Learning Communities*, 135 Edn. Research Intelligence, 17–18.

Brown, C. (2019). *School/University Partnerships: An English perspective, Die Deutsche Schule*, Vol. 111. Münster: Waxmann, 22–34.

Brown, C. (2020). *The Networked School Leader: How To Improve Teaching And Student Outcomes Using Learning Networks*. London: Emerald.

Brown, C., and Flood, J. (2018). Lost in translation? Can the use of theories of action be effective in helping teachers develop and scale up research-informed practices? *Teach. Teach. Educ.* 72, 144–154. doi: 10.1016/j.tate.2018.03.007

Brown, C., and Flood, J. (2019). *Formalise, Prioritise and Mobilise: How School Leaders Secure The Benefits of Professional Learning Networks*. London: Emerald.

Brown, C., and Greany, T. (2017). The evidence-informed school system in england: where should school leaders be focusing their efforts? *Leadersh. Policy Sch.* 17, 1–23.

Brown, C., MacGregor, S., and Flood, J. (2020). Can models of distributed leadership be used to mobilise networked generated innovation in schools? A case study from England. *Teach. Teach. Educ.* 94:103101. doi: 10.1016/j.tate.2020.103101

Brown, C., and Malin, J. (eds) (2022). *The Handbook of Evidence-Informed Practice in Education: Learning from International Contexts*. London: Emerald.

Brown, C., and Malin, J. R. (2017). Five Vital Roles For School Leaders In The Pursuit Of Evidence Of Evidence-Informed Practice. Teachers College Record. Available online at: Retrieved from http://www.tcrecord.org/Content.asp?ContentId=21869. (accessed June 15, 2020).

Brown, C., and Rogers, S. (2015). Knowledge creation as an approach to facilitating evidence-informed practice: examining ways to measure the success of using this method with early years practitioners in Camden (London). *J. Educ. Change* 16, 79–99. doi: 10.1007/s10833-014-9238-9

Brown, C., Daly, A., and Liou, Y.-H. (2016). Improving trust, improving schools: findings from a social network analysis of 43 primary schools in england. *J. Prof. Cap. Community* 1, 69–91. doi: 10.1108/jpcc-09-2015-0004

Brown, C., White, R., and Kelly, A. (2021). Teachers as educational change agents: what do we currently know? Findings from a systematic review. *Emerald Open Res.* 3:26.doi: 10.35241/emeraldopenres.14385.1

Brown, C., Zhang, D., Xu, N., and Corbett, S. (2018). Exploring the impact of social relationships on teachers' use of research: a regression analysis of 389 teachers in England. *Int. J. Educ. Res.* 89, 36–46. doi: 10.1016/j.ijer.2018.04.003

Cain, T. (2015). Teachers' engagement with published research: addressing the knowledge problem. *Curric. J.* 26, 488–509. doi: 10.1080/09585176.2015.1020820

Cain, T., Brindley, S., Brown, C., Jones, G., and Riga, F. (2019). Bounded decision-making, teachers' reflection, and organisational learning: how research can inform teachers and teaching. *Br. Educ. Res. J.* 45, 1072–1087. doi: 10.1002/berj.3551

Coldwell, M., Greany, T., Higgins, S., Brown, C., Maxwell, B., Stiell, B., et al. (2017). *Evidence-informed Teaching: An Evaluation Of Progress In England*. London: Department for Education.

Cooper, A., and Levin, B. (2010). Some Canadian contributions to understanding knowledge mobilization. *Evid. Policy* 6, 351–369. doi: 10.1332/174426410x524839

Cordingley, P. (2013). The contribution of research to teachers' professional learning and development. *Oxford Rev. Educ.* 41, 234–252. doi: 10.1080/03054985.2015.1020105

Costello, A. B., and Osbourne, J. W. (2005). Best practices in exploratory factor analysis: four recommendations for getting the most from your analysis. *Pract. Assess.* 10, 1–9. doi: 10.1080/00224499.2015.1137538

Crain-Dorough, M., and Elder, A. (2021). Absorptive capacity as a means of understanding and addressing the disconnects between research and practice. *Rev. Res. Educ.* 45, 67–100. doi: 10.3102/0091732x21990614

Department for Education (2019a). *School Workforce In England: November 2018*. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/811622/SWFC_MainText.pdf (accessed June 15, 2020).

Department for Education (2019b). *Schools, Pupils And Their Characteristics: January 2019*. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/812539/Schools_Pupils_and_their_Characteristics_2019_Main_Text.pdf (accessed June 15, 2020).

Ehren, M. (2019). "Accountability structures that support school self-evaluation, enquiry and learning," in *An Eco-System for Research Engaged Schools: Reforming Education Through Research*, eds D. Godfrey and C. Brown (London: Sage), 41–55.

Fabrigar, L. R., MacCallum, R. C., Wegener, D. T., and Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychol. Methods* 4, 272–299. doi: 10.1037/1082-989x.4.3.272

Galdin-O'Shea, H. (2015). "Leading the use of research & evidence in schools,"in *Leading 'Disciplined Enquiries' in Schools*, ed. C. Brown (London: IOE Press), 91–106.

Gehlbach, H., and Brinkworth, M. E. (2011). Measure twice, cut down error: a process for enhancing the validity of survey scales. *Rev. Gen. Psychol.* 15, 380–387. doi: 10.1037/a0025704

Godfrey, D. (2016). Leadership of schools as research-led organisations in the English educational environment: cultivating a research-engaged

school culture. *Educ. Manag. Admin. Leadersh.* 44, 301–321. doi: 10.1177/1741143213508294

Goldacre, B. (2013). *Building Evidence Into Education*. Available online at: https://www.gov.uk/government/news/building-evidence-into-education (accessed January 27, 2020).

Gorard, S., Griffin, N., See, B., and Siddiqui, N. (2019). *How Can We Get Educators To Use Research Evidence?*. Durham: Durham University Evidence Centre for Education.

Gough, D. (2021). Appraising evidence claims. *Rev. Res. Educ.* 45, 1–26. doi: 10.3102/0091732x20985072

Graesser, A. (2006). Question understanding aid (QUAID): a web facility that tests question comprehensibility. *Public Opin. Q.* 70, 3–22. doi: 10.1093/poq/nfj012

Graves, S., and Moore, A. (2017). How do you know what works, works for you? An investigation into the attitudes of school leaders to using research evidence to inform teaching and learning in schools. *Sch. Leadersh. Manag.* 38, 259–277. doi: 10.1080/13632434.2017.1366438

Greany, T., and Earley, P. (2018). The paradox of policy and the quest for successful leadership. *Prof. Dev. Today* 19, 6–12.

Gu, Q., Hodgen, J., Adkins, M., and Armstrong, P. (2019). *Incentivising Schools To Take Up Evidence-Based Practice To Improve Teaching And Learning; Evidence From The Evaluation Of The Suffolk Challenge Fund.* Final Report, July, 2019. London: Education Endowment Foundation.

Hammersley, M. (1997). Educational research and teaching: a response to David Hargreaves TTA lecture. *Br. Educ. Res. J.* 23, 141–161. doi: 10.1080/0141192970230203

Handscomb, G., and MacBeath, J. (2003). *The Research Engaged School. Forum for Learning and Research Enquiry (FLARE)*. Essex: Essex County Council.

Hargreaves, A., and Fullan, M. (2012). *Professional Capital: Transforming Teaching in Every School*. New York, NY: Teachers College Press.

Hargreaves, D. (1996). *The Teaching Training Agency Annual Lecture 1996: Teaching As A Research Based Profession: Possibilities And Prospects*. Available online at: http://eppi.ioe.ac.uk/cms/Portals/0/PDF%20reviews%20and%20summaries/TTA%20Hargreaves%20lecture.pdf (accessed May 14, 2020).

Higher Education Funding Council, England (2011). *Assessment Framework and Guidance on Submissions*. Bristol: HEFCE.

Honig, M. (2006). Street-level bureaucracy revisited: frontline district central-office administrators as boundary spanners in education policy implementation. *Educ. Eval. Policy Anal.* 28, 357–383. doi: 10.3102/01623737028004357

Hubers, M. D. (2016). *Capacity Building By Data Team Members To Sustain Schools' Data Use*. Enschede, NL: Gildeprint.

Joram, E., Gabriele, A., and Walton, K. (2020). What influences teachers 'buy-in' of research? Teachers' beliefs about the applicability of educational research to their practice. *Teach. Teach. Educ.* 88:102980. doi: 10.1371/journal.pone.0131121

Kass, G. V. (1980). An exploratory technique for investigating large quantities of categorical data. *J. R. Stat. Soc. C* 29, 119–127. doi: 10.2307/2986296

Kools, M., and Stoll, L. (2016). *What Makes A School A Learning Organisation: A Guide For Policy-Makers, School Leaders And Teachers*. Available online at: https://www.oecd.org/education/school/school-learning-organisation.pdf (accessed July 12, 2020).

Lawlor, J. A., Mills, K. J., Neal, Z., Neal, J. W., Wilson, C., and McAlindon, K. (2019). Approaches to measuring use of research evidence in K-12 settings: a systematic review. *Educ. Res. Rev.* 27, 218–228. doi: 10.1016/j.edurev.2019.04.002

Lee, M., and Louis, K. S. (2019). Mapping a strong school culture and linking it to sustainable school improvement. *Teach. Teach. Educ.* 81, 84–96. doi: 10.1016/j.tate.2019.02.001

MacGregor, S., Malin, J. R., and Farley-Ripple, L. (2022). An application of the social-ecological systems framework to promoting evidence-informed policy and practice. *Peabody J. Educ.* 97, 112–125. doi: 10.1080/0161956x.2022.2026725

Malin, J. R., Brown, C., and Saultz, A. (2019). What we want, why we want it: K-12 educators' evidence use to support their grant proposals. *Int. J. Educ. Policy Leadersh.* 15, 1–19. doi: 10.1017/9781108611794.001

Malin, J. R., Brown, C., Ion, G., Van Ackeren, I., Bremm, N., Luzmore, R., et al. (2020). World-wide barriers and enablers to achieving evidence-informed practice in education: what can be learnt from Spain, England, the United States, and Germany? *Hum. Soc. Sci. Commun.* 7, 1–14. doi: 10.1108/978-1-80043-141-620221003

Messick, S. (1995). Validity of psychological assessment: validation of inferences from persons' responses and performances as scientific inquiry into score meaning. *Am. Psychol.* 50, 741–749. doi: 10.1037/0003-066X.50.9.741

Milanović, M., and Stamenković, M. (2016). CHAID decision tree: methodological frame and application. *Econ. Themes* 54, 563–586. doi: 10.1515/ethemes-2016-0029

Mincu, M. (2014). *Inquiry Paper 6: Teacher Quality And School Improvement ?What Is The Role Of Research?*. London: British Educational Research Association.

Mintrop, R., and Zumpe, E. (2019). Solving real life problems of practice and education leaders' school improvement mindsets. *Am. J. Educ.* 3, 295–344. doi: 10.1086/702733

Mintz, J., and Wyse, D. (2015). Inclusive pedagogy and knowledge in special education: addressing the tension. *Int. J. Incl. Educ.* 19, 1161–1171. doi: 10.1080/13603116.2015.1044203

Mintz, J., Hick, P., Solomon, Y., Matziari, A., Ó'Murchú, F., Hall, K., et al. (2020). The reality of reality shock for inclusion: how does teacher attitude, perceived knowledge and self-efficacy in relation to effective inclusion in the classroom change from the pre-service to novice teacher year? *Teach. Teach. Educ.* 91, 1–11.

Morton, S., and Seditas, K. (2016). Evidence synthesis for knowledge exchange: balancing responsiveness and quality in providing evidence for policy and practice. *Evid. Policy* 14, 155–167. doi: 10.1332/174426416x14779388510327

Nelson, J., and O'Beirne, C. (2014). *Using Evidence In The Classroom: What Works And Why?*. Slough: National Foundation for Educational Research.

Nutley, S. M., Walter, I., and Davies, H. T. O. (2007). *Using Evidence: How Research Can Inform Public Services*. Bristol: The Policy Press.

Oakley, A. (2000). *Experiments In Knowing: Gender And Method In The Social Sciences*. Cambridge: Polity Press.

Rickinson, M., Walsh, L., Cirkony, C., Salisbury, M., and Gleeson, J. (2020). *Monash Q Project "Using Evidence Better" Quality Use Of Research Evidence Framework*. Melbourne: Monash University & Paul Ramsay Foundation.

Rogers, E. (1995). *Diffusion Of Innovations*, 4th Edn. New York, NY: The Free Press.

Rose, J., Thomas, S., Zhang, L., Edwards, A., Augero, A., and Rooney, P. (2017). *Research Learning Communities Evaluation Report And Executive Summary (December 2017)*. Available online at: https://educationendowmentfoundation.org.uk/public/files/Projects/Evaluation_Reports/Research_Learning_Communities.pdf (accessed May 15, 2020).

See, B., Gorard, S., and Siddiqi, N. (2016). Teachers' use of research evidence in practice: a pilot study of feedback to enhance learning. Educ. Res. 58, 56–72. doi: 10.1080/00131881.2015.1117798

Royal Society for the Encouragement of the Arts, Manufacturing and Commerce (RSA) (2014). *The Role Of Research In Teacher Education: Reviewing the Evidence*. Available online at: www.bera.ac.uk/wp-content/uploads/2014/02/BERA-RSA-Interim-Report.pdf (accessed May 8, 2020).

Van Mieghem, A., Verschueren, K., Petry, K., and Struyf, E. (2020). An analysis of research on inclusive education: a systematic search and meta review. *Int. J. Incl. Educ.* 24, 675–689. doi: 10.1080/13603116.2018.1482012

Veblen, T. (1899). *The Theory of the Leisure Class*. London: Macmillan.

Von Hippel, A. (2014). Program planning caught between heterogeneous expectations – An approach to the differentiation of contradictory constellations and professional antinomies. *Edukacja Dorosłych* 1, 169–184.

Walker, J., Nelson, J., Bradshaw, S., and Brown, C. (2018). *Researching Teachers' Engagement with Research and EEF Resources*. London: Education Endowment Foundation.

Walker, J., Nelson, J., Bradshaw, S., and Brown, C. (2019). *Teachers' Engagement with Research: What Do We Know? A Research Briefing*. London: Education Endowment Foundation.

Walker, M. (2017). *Insights into the Role of Research and Development in Teaching Schools*. Slough: NfER.

Wiggins, M., Jerrim, J., Tripney, J., Khatwa, M., and Gough, D. (2019). *The Rise Project; Evidence Informed School Improvement, Final Report, May 2019*. London: EEF.

Willis, G., and Lessler, J. T. (1999). *Question Appraisal System: QAS-99*. Rockville, MD: Research Triangle Institute.

Wisby, E., and Whitty, G. (2017). "Is evidence-informed practice any more feasible than evidence-informed policy," in *Proceedings of the Presented At The British Educational Research Association Annual Conference*, Sussex.

Wrigley, T. (2018). The power of 'evidence': reliable science or a set of blunt tools? *Br. Educ. Res. J.* 44, 359–376. doi: 10.1002/berj.3338

Wyse, D., and Torgeson, C. (2017). Experimental trials and 'what works?' in education: the case of grammar for writing. *Br. Educ. Res. J.* 43, 1019–1047. doi: 10.1002/berj.3315

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REVIEW
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Perspectives of Children and Youth With Disabilities and Special Needs Regarding Their Experiences in Inclusive Education: A Meta-Aggregative Review

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Inclusive education is important to achieve high-quality education for all; however, there is an important gap in the literature surrounding inclusive education, namely representation of the perspectives of children and youth with disabilities and special needs. In this study, we used a meta-aggregative approach to qualitative evidence synthesis to bring together systematically the perspectives of these children and youth regarding their experiences in inclusive education, and to generate recommendations for action. After selecting and critically appraising the methodological quality of eligible qualitative studies, we extracted the findings from the results sections of 27 studies involving children and youth with various diagnoses and special needs. We aggregated the findings to develop 19 categories, which we further synthesized into six overarching statements pertaining to: (i) teachers' and education workers' support and attitudes; (ii) implementation of support and accommodations; (iii) need for safe and accommodating physical environment; (iv) preparation for high school transitions; (v) friendships and peer interactions; and (vi) participants' own views of themselves. Implications of our findings include: (i) a need for strong leadership at the school level to support implementation of inclusive education; (ii) a need for leadership from government agencies and schools to provide opportunities for teachers to train and collaborate with other professionals; and (iii) a need for flexibility in curriculum and instruction, for which educators require training and experience. Most importantly, our findings show that children and youth with disabilities and special needs, when provided opportunities, demonstrate profound personal understandings of their strengths and needs, their conditions and how these impact their lives, leading to insightful information that can enhance inclusive education practice and policy.

Keywords: qualitative, school, student, special education, accessibility, inclusion, accommodation

INTRODUCTION

Education is a fundamental human right. It is recognized worldwide that all individuals with disabilities have a right to an inclusive education (IE) where there is meaningful access to, and full participation, for everyone (United Nations International Children's Emergency Fund [UNICEF], 2017; Reid et al., 2018). IE contributes to developing fairer and more inclusive societies (Committee on the Rights of Persons with Disabilities, 2016; United Nations International Children's Emergency Fund [UNICEF], 2017). IE also is critical to achieve high-quality education for all children and youth, including those with disabilities and special needs, because it ensures access to education without discrimination and with appropriate support (United Nations International Children's Emergency Fund [UNICEF], 2017). IE promotes a sense of belonging and fosters a culture of respect through a positive learning environment that enables each student to participate and develop to their full academic, social, emotional, and physical potential (Canadian Research Centre on Inclusive Education, n.d.; New Brunswick Association for Community Living, n.d.; United Nations Division for Social Policy and Development and Department of Economic and Social Affairs, 2016, p.4).

Although IE has been recognized worldwide, there is no single universal definition of the concept. In essence, IE means that all types of students are welcomed into the general education system regardless of their functional abilities and differences; further, it is the way schools, activities, and programs are designed to respond to individual learning needs by providing sufficient support and removing barriers to participation for all students (Inclusive Education Canada, n.d.; United Nations Educational, Scientific and Cultural Organization, 1994). IE is not simply the practice of providing students with access to general education; it is a belief system in which each individual feels as if they are valued and they belong (Falvey and Givner, 2005).

Research shows that IE has many benefits for its participants. For example, all children, whether or not they have disabilities or special needs, perform better academically when educated in inclusive settings (Salend and Duhaney, 1999; Hehir et al., 2012; Cosier et al., 2013; Szumski et al., 2017). Also, children with disabilities and special needs in inclusive settings are less likely to experience limited academic opportunities and be negatively affected in their future academic opportunities, compared to those in self-contained special education classrooms (Mitchell, 2010; Parekh and Brown, 2019).

In the last 10 years, several literature reviews have focused on the experiences of children without disabilities or special needs in inclusive settings (de Boer et al., 2012; Yu et al., 2012; Szumski et al., 2017; Dell'Anna et al., 2019). For example, de Boer and colleagues (2012) found that these children generally held neutral beliefs, feelings, and behavioral intentions toward their peers with disabilities. In their recent systematic review, Dell'Anna et al. (2019) also found that children without disabilities generally held a positive attitude toward their peers with disabilities and special needs; they expressed some social acceptance, empathy, and concern toward those peers. However, the existence of a separate special education unit at school could negatively influence their attitudes (Dell'Anna et al., 2019).

When looking at other stakeholders' perspectives on IE, it appears that many believe IE benefits all. In a recent review of the literature, Roberts and Simpson (2016) found that parents and educators of children with autism agree that IE promotes awareness and a more positive attitude toward diversity, and opportunities to develop social skills. However, the primary studies within this review mostly included the perspectives of education professionals (N = 749) and parents (N = 347); far fewer children and youth with autism were involved (N = 105). Knowledge and understanding of autism were viewed as an important factor for successful inclusion by all stakeholders, including children and youth with autism. The young participants also discussed their mixed feelings toward socializing with peers and challenges to social communication.

Despite varied evidence on IE, there is a lack of synthesized empirical data within the current research regarding IE from the perspectives of children and youth with disabilities and special needs. Knowledge gleaned from these experiences of children and youth will provide a deeper, richer understanding of IE, especially when viewed in tandem with the various other perspectives already present in the literature. It is crucial to ensure that children and youth with disabilities have an opportunity to voice their experiences with IE and for others to learn from them about this important aspect of their lives, as they are the only ones who can provide this important perspective.

The perspectives of children and youth with disabilities and special needs arguably would best be represented through qualitative research, as these approaches examine the personal, social, political, and cultural aspects of a phenomenon (Pearson et al., 2011). Because qualitative studies prioritize context and meaning when studying human experiences, participants' voices and experiences would be highlighted (Pearson et al., 2011). Thus, a synthesis of qualitative studies would help to create a deeper and more comprehensive knowledge surrounding the experiences of children and youth with disabilities and special needs in IE.

Our review team has identified only one peer-reviewed publication that synthesizes qualitative research about the perspectives of children with disabilities and special needs regarding IE. Hannes et al. (2018) utilized the meta-aggregative approach to qualitative evidence synthesis (QES) developed by the Joanna Briggs Institute (JBI). The meta-aggregative approach is based on the process of systematic review and is pragmatic; it generates synthesized statements, in the form of recommendations, to guide practitioners, policy makers, and other relevant stakeholders without re-interpreting the data from the primary qualitative studies (Hannes et al., 2018). In their study, Hannes et al. drew on the topic of experiences of young students with special education needs in IE as an example to illustrate how the meta-aggregative method works. Informed by their findings, they developed synthesized statements addressing different areas within the school context: teachers, peers, school, and the individual level.

It is noteworthy that Hannes and colleagues' review (2018) is novel in principle as a working example of JBI meta-aggregation

and also begins to highlight the voices of children with disabilities and special needs in IE. However, their paper focused on illustrating the approach to the JBI meta-aggregation; the literature review was presented as a working example to illustrate the method. For example, although published in 2018, the literature search covered only studies published up until 2010 and the authors ultimately included only seven primary studies, none of which met all their inclusion criteria. Because of the increased emphasis and awareness of the need for IE internationally over the past decade, we aim to update the existing search and synthesis through our review of the literature on this topic.

In this paper, our primary focus is to explore the perspectives of children and youth with disabilities and special needs regarding their experiences in IE by employing the JBI meta-aggregative approach and building on the work of Hannes et al. (2018). We plan to examine the experiences of children and youth with disabilities in IE from their first-person perspectives by conducting a comprehensive search for and synthesis of the most recent and methodologically rigorous relevant primary qualitative studies, as well as to use this knowledge to generate recommendations for relevant stakeholder(s).

METHOD

Research Question and Search Strategy

For our review, we posed the question: What are the perspectives of children and youth with disabilities and special needs regarding their experiences in inclusive education? *Disability*, in this case, refers to any reduction in functioning, activity limitations, and/or participation restrictions resulting from the interaction between an individual's health condition and functioning (disease, disorder, impairment, injury etc.) and the context of their environment (Leonardi et al., 2006; World Health Organization [WHO], 2011). *Special needs* are defined as "any of various difficulties (such as a physical, emotional, behavioral, or learning disability or impairment) that cause an individual to require additional or specialized services or accommodations (such as in education or recreation)" (Merriam-Webster, 2020).

We structured our question using the "Population, Interest, Context" (PICo) format to identify clearly the main concepts of the review question and help inform the search strategy (Lockwood et al., 2020). Our *population* was children and youth with disabilities and special needs in elementary, middle, and high school; our *interest* was their perspectives regarding their experiences at school; and the *context* was IE.

Upon establishing our research question, we consulted with a librarian to design our search strategy. *Population* included terms for the types of participants, including terms for age groups (school-aged children and youth) combined with terms for specific disabilities and health conditions using the Boolean operator AND. *Interest* included terms for the age group combined with terms for perspectives using an adjacency operator. An adjacency, or proximity, operator searches for two terms next to each other, in any order, up to a specified number of words between them. *Context* included terms that describe school settings and IE. For our review, we defined IE as attendance of school-aged children and youth with disabilities and special needs in a general education classroom, that is, not education in a segregated setting. It is beyond the scope of this review to determine and discern the extent to which the educational settings of the participants of the primary studies were philosophically and practically inclusive. To further narrow the search yield to relevant studies, we added search terms for qualitative studies. We conducted a comprehensive search of the literature published between January 2011 and August 2019. We did not search literature published prior to 2011 because we were updating the search completed by Hannes et al. (2018).

We employed this search strategy with five relevant, major databases: PsycINFO, ERIC, Medline, CINAHL, and Web of Science. In addition to limiting the searches by publication date, we also used a filter for peer-reviewed and English-language publications. Example search terms used for each concept are summarized in **Table 1**, and the complete search strategy for PsycINFO is provided in **Supplementary Appendix A**.

For this meta-aggregative review, we followed the guidelines presented in the JBI manual for systematic reviews of qualitative evidence and registered a protocol with PROSPERO (CRD42020172148) (Lockwood et al., 2020).

Inclusion and Exclusion Criteria

We included primary studies that employed qualitative research methods to elicit the perspectives and experiences of children and youth in IE; these could include questionnaires with open-ended answers, interviews, focus groups, etc. Additionally, since meta-aggregative reviews synthesize findings from the literature to make recommendations for policy and practice, we wanted to ensure that the literature had met standards of peer review prior to publication; thus, we considered only peer-reviewed literature. We included studies with students with a disability, health condition, and/or special education need attending inclusive classrooms from kindergarten through to high school. We also included studies in which participants were not attending school during the study period but were reflecting on their previous experiences in an inclusive school. To increase the relevance of our findings for stakeholders in Canada, we included studies that were completed with participants from high-income countries (The World Bank, n. d.). We only considered studies that reported on school-related experiences of children and youth with disabilities attending inclusive classes in kindergarten to high school. The experiences had to be reported from their first-person perspectives. We also considered studies that included other types of participants along with our population of interest, for example parents, educators, or typically developing peers and friends. However, these studies were included only if the findings representing the perspectives of children and youth with a disability were identifiable as being distinct from those of the other participants.

We excluded studies with quantitative research methods only, or those that employed mixed methods, to maintain a consistent focus on qualitative research. Mixed method studies collect both qualitative and quantitative data, with quantitative data potentially informing the analysis and interpretation of the qualitative data. We excluded all gray literature,

TABLE 1 | Example of database search terms.

Population terms	Interest terms	Context terms	Study design terms
(child* *OR* student* *OR* youth) *AND* (disab* *OR* special need* *OR* autis*)	(youth* *OR* child*) (adjacency operator) (attitude* *OR* experience* *OR* perspective* *OR* voice*)	inclus* *OR* mainstream *OR* school* *OR* class*	ethnography *OR* interview *OR* qualitative *OR* photovoice

including book chapters, dissertations, theses, government publications, and conference proceedings as these publications generally are not peer reviewed. Studies where participants were educated in a specialized/segregated setting, including home-schools, specialized institutions, and self-contained classrooms were excluded.

Selection of Studies

Screening

Three independent reviewers (TP, PC, and EK) completed study selection in two phases using Covidence (Veritas Health Innovation, 2020). In the first phase, the reviewers independently screened the article titles and abstracts. They excluded studies that clearly did not meet inclusion criteria; they included studies if all criteria were met or when there were any uncertainties. Prior to independent review, the reviewers completed a training session in which they independently reviewed 100 titles and abstracts, compared their decisions, and met to discuss disagreements and refine the inclusion/exclusion criteria. Next, the reviewers performed reliability with 100 titles and abstracts until a level of agreement of 80%, established *a priori*, was reached among the reviewers. There is no specific recommended Kappa; however, PRISMA guidelines recommend having a predetermined level of agreement, which is typically 70–80% (Liberati et al., 2009; Tricco et al., 2018). A list of all inclusion and exclusion criteria, based on the criteria stated earlier, is included in **Supplementary Appendix B**. These criteria guided reviewers in both phases of study selection.

Next, the same two reviewers independently reviewed the full texts of studies advanced from the title and abstract screening stage. Any two of the two reviewers had to agree on the decision to include or exclude a study. Any disagreements were resolved through a discussion and consensus. All reviewers completed training, led by the first author, and reliability testing at the beginning of the full-text review phase. The reviewers independently reviewed 25 full texts for training. A second round of training was completed after making some minor updates to the inclusion and exclusion criteria. Next, the reviewers assessed reliability using 30 citations, approximately 10% of the remaining citations.

Critical Appraisal

An important step in a meta-aggregative review process is to assess methodological quality of the papers included in the final review. This allows reviewers to identify methodologically sound research, because the purpose of meta-aggregation is to produce recommendations to guide practitioners and policy makers. Following the JBI recommendations, we used the standardized JBI critical appraisal instrument for qualitative research and tailored it to fit our review question and purpose (Lockwood et al., 2020). We consulted with JBI through email and with colleagues with experience and expertise in qualitative research, with whom we held multiple peer debriefing sessions regarding critical appraisal. Our modifications to tailor the JBI tool were informed by the Critical Appraisal Skills Program (CASP) qualitative checklist and a modified version of this tool used by McTavish and colleagues for a qualitative meta-synthesis (McTavish et al., 2017; Critical Appraisal Skills Program [CASP], 2018). These tools provided explicit guidance by presenting specific questions to consider and examples of items in a qualitative study that would clearly indicate when a certain criterion has been adequately met. We used these resources and other relevant literature (Thorne, 2000; Mack et al., 2005; Hannes et al., 2013; Kivunja and Kuyini, 2017; Korstjens and Moser, 2018) to create an accompanying guideline providing detailed instructions on how to interpret each JBI criterion. Further clarifying and explaining the criteria helped ensure that the appraisers understood what each criterion entailed and how to decide when it was met.

Our modified JBI checklist and guideline, located in **Supplementary Appendix C**, included two screening criteria. We incorporated these to ensure both relevance and appropriateness of studies to our review question, before further appraisal of methodological quality. Studies that did not meet these criteria were excluded, as they would not have been relevant to the review question and purpose.

Three appraisers (TP, PC, and AJ) completed training and calibration exercises for this phase. Each study was independently appraised by at least two appraisers. If the study met the two screening criteria, the appraisers completed the critical appraisal checklist and discussed the overall methodological quality of the study. If they reached consensus that a study was of high methodological quality and relevant to the review question and purpose, it was included in the final synthesis.

Data Extraction

In addition to extracting general details of studies, data for meta-aggregative reviews are extracted in the form of "findings," which refer to "a verbatim extract of the author's analytic interpretation" of their data from the results of their published manuscript; this includes themes, categories, or metaphors from the primary study (Lockwood et al., 2020, chapter 2.7.6.3). Each finding is accompanied by an illustration – a direct quotation from a participant – that informs the finding. Subsequently, each extracted finding is assigned one of three levels of credibility: unequivocal, credible, or unsupported, based on the reviewer's perception of whether the findings reported by the authors were supported by the evidence (i.e., the illustration). **Table 2**

TABLE 2 | Levels of credibility and their descriptions.

Level of credibility	Description
Unequivocal	Evidence that is beyond reasonable doubt. This may include findings accompanied by illustrations that are matter of fact, directly reported/observed and not open to challenge.
Credible	Evidence that is plausible but can be open to challenge. This includes findings that are accompanied by an illustration lacking clear association with it.
Unsupported	When none of the other level descriptors apply, and when the finding is not supported by the data.

Adapted from "Systematic Reviews of Qualitative Evidence" by C. Lockwood, K, Porrit, Z. Munn, 2020 (https://wiki.jbi.global/display/MANUAL/2.4+The+JBI+Approach+to+qualita-tive+synthesis).

provides a description of the three levels of credibility according to JBI. Unsupported findings are not considered for synthesis (Lockwood et al., 2015).

Two review team members extracted data from the included studies. First, we extracted descriptive characteristics of each study, which were reviewed to ensure accuracy. The extracted characteristics included phenomenon of interest, population characteristics, setting, and the study methods used. Second, we extracted the findings from the included studies, which included categories, themes, or metaphors described by the authors of the primary study. Where possible, we extracted a verbatim description of the theme or category using the authors' own words; however, for studies where the authors did not provide a concise description, we paraphrased the theme. For each finding, we also extracted the first full/complete quote from a participant. We defined a quote as "full" or "complete" when it was "self-sufficient" and did not require the author's interpretation or context to understand it. We chose to extract the first full or complete quote as our illustration in order to be consistent among all findings and limit selection bias. Consistent with JBI guidelines, we then assigned levels of evidence to the extracted findings. A second reviewer verified the extracted findings, including their descriptions, and independently assigned a level of credibility to each finding. Any discrepancies in the level of credibility were addressed by the primary author because of her expertise with the method and familiarity with the primary studies. Only unequivocal and credible findings were considered for further categorization, as per JBI.

Data Synthesis

In a meta-aggregative review, data synthesis is the process of aggregating or grouping findings to develop categories. In this process, two or more similar findings are aggregated to form categories. Subsequently, two or more categories are grouped to develop synthesized findings that form the basis of recommendations for practice or policy. Results are reported using flowcharts showing the relationship between the number of individual findings, the categories that they form, and the overall synthesized statements that they support. Such flowcharts are accompanied by a narrative description in the text that explains the relationship between the findings, categories, and synthesized statements. The findings themselves along with supporting illustrative quotes and their assigned level of credibility are included in an appendix for transparency.

The primary author, TP, identified and assembled findings with similar concepts based on their descriptions to form categories. Next, she created titles and descriptions that encompassed the overall theme, or essence, of all findings in each category. In the final step, the categories were subjected to a meta-aggregation in which categories with common themes and similar key messages were further grouped to produce a single comprehensive set of synthesized findings.

Throughout the data synthesis process, we ensured thoroughness through peer debriefings. We shared the synthesis results, through four peer debriefing sessions, with peers who were not involved in the initial data categorizing process, to enhance the clarity and fidelity of the categories and the synthesized final statements. These insights from outsiders, who had varied research and clinical backgrounds and provided varied perspectives, ensured that the findings were in fact alike, and the categories and synthesized statements under which they were grouped were clear and represented them well. We ensured further rigor by maintaining a record of all decisions and changes to our categories and synthesized statements during the synthesis process.

RESULTS

The review team identified and screened the titles and abstracts of 11 037 studies and full texts of 355 studies (**Figure 1**). At the title and abstract screening stage, we had a moderate Kappa, 0.49, and a high level of agreement, 97.5–98.5%, between the reviewers. We tested agreement again after screening approximately half, or 6000, titles and abstracts to ensure a good agreement among reviewers. The Kappa at this point was substantial, at 0.77, and the percent agreement remained high at 96.5–98.5%. At the full text review stage, we had substantial agreement, with a Kappa of 0.79, and a high level of inter-rater agreement at 90.0–96.7%. During data extraction and assignment of level of credibility, there was good agreement between the reviewers since they agreed on which findings were unsupported, and therefore should be excluded, as well as the level of credibility for most of the other findings We excluded 265 studies after reviewing the full texts because: (a) the findings from the population of interest were not distinct from those of the other participants (N = 114), (b) participants did not discuss experiences at their (mainstream) school (N = 46); (c) studies did not use qualitative methods (N = 36); (d) participants did not attend an inclusive classroom (N = 27), did not discuss experiences at school age (N = 15), or did not have a disability (N = 8); or (e) the study was not peer-reviewed (N = 8), a primary study (N = 6), or was not performed with participants from

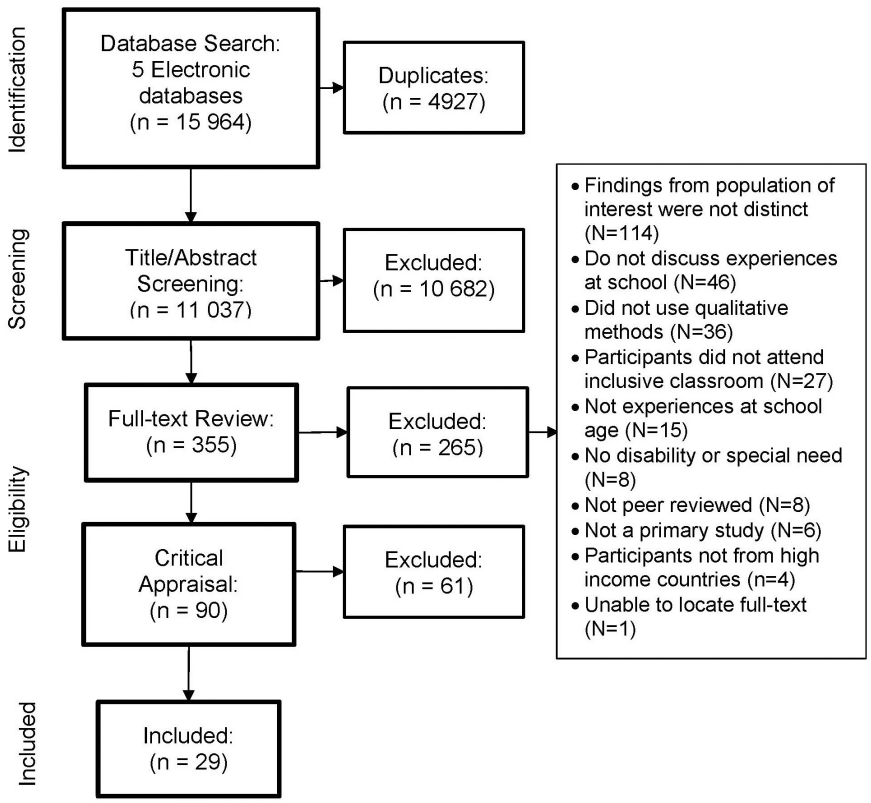

FIGURE 1 | Flowchart outlining the review process.

high-income countries ($N = 4$). We were unable to locate the full text of one citation.

The team critically appraised 90 studies using the modified JBI critical appraisal checklist, and 29 advanced to the data extraction phase. Of these 29 studies, twelve studies met all nine critical appraisal criteria, eight studies were missing part of one criterion, and 9 were missing one criterion. We excluded 61 studies, of which 34 did not meet our screening criteria and 27 were missing multiple criteria that were crucial to the review question and purpose, or for ensuring the methodological soundness of the study.

At the data extraction stage, two studies using narrative inquiry methodology were excluded, because we were unable to extract data (i.e., specific findings and illustrations) from these study results using the process of data extraction for meta-aggregative reviews, as specified in the JBI manual. The final sample of studies eligible for data extraction include 27 primary qualitative studies described in **Table 3**. Most studies ($N = 24$) were conducted either in Australia ($N = 8$), United States of America ($N = 6$), Canada ($N = 5$), England/United Kingdom ($N = 3$), or Ireland ($N = 2$). These studies utilized various methodologies: interpretive phenomenological analysis (IPA) ($N = 5$), phenomenology ($N = 3$), case study ($N = 4$), phenomenography ($N = 1$), grounded theory ($N = 1$), and participation research ($N = 1$). Twelve studies did not report a specific methodology. The participants included both males and females from elementary, middle, and high schools; four studies focused on adult participants' reflections on their experiences at school age. Studies included participants with various diagnoses and special needs, including visual impairment ($N = 7$), autism ($N = 6$), cerebral palsy (CP) ($N = 3$), developmental coordination disorder, type 1 diabetes, asthma, etc. The studies explored a variety of phenomena of interest, such as the participants' experiences related to their schooling in general, transition to high school, and physical education and activity.

We identified 126 findings from the 27 included studies. Ten of these were "unsupported" and 14 were irrelevant, i.e., they did not include the children's experiences at school and/or were not accompanied by relevant quotes, and thus were excluded from the synthesis. We synthesized the remaining 102 findings, presented in **Supplementary Appendix D** along with their supporting quotes and descriptions.

We generated 19 *categories* based on grouping findings with similar meanings and ideas, and further grouped the 19 *categories* into six overarching *synthesized statements*, as per JBI guidelines described in the *Methods* section. The resulting statements relate to the following areas of school experience of children and youth with disabilities and special needs: (i) teachers' and education workers' attitudes and supportiveness; (ii) education workers' and support personnel's implementation of suitable support and accommodations; (iii) students' need for safe and accommodating physical environments at school; (iv) students'

TABLE 3 | Main characteristics of the studies selected for data extraction and synthesis.

Author		Study characteristic		Participant characteristic			Study setting	
	Phenomenon of interest	**Methodology**	**Method of data collection**	**Data analysis approach**	**Participants' gender and age (years)**	**Type of disability or SEN**	**Setting**	**Location of study**
1. Flower et al. (2015)	Perceptions of school experiences in preparation for transition of high school students with emotional disturbance	Phenomenography	Interviews	Thematic analysis	6 males and 1 female 15–18	Emotional Disturbance	Local high school	United States
2. Gaskin et al. (2012)	Meanings and experiences of activity of an individual with cerebral palsy throughout their life	Case study	Interview	Not specified	1 female 29	Cerebral palsy (spastic Hemiplegic)	School for disabled children in early primary schooling (late 1970s). Mainstream primary school and high school	Australia
3. Gibbs (2018)	Perspectives of adolescent boys with ADHD on teaching and teaching factors that enabled them to regain focus (if distracted) and concentrate on classroom learning	Multiple, instrumental case study	Semi-structured individual and focus group interviews (as well as school reports)	Constant Comparison method	6 males Middle or senior years of schooling (Years 9–12) (age not reported)	ADHD	All-boys high school	Australia
4. Goodall (2019)	Perspectives of young people with autism on their educational experiences	Not reported	Semi-structured interviews, participatory methods	Thematic analysis	7 males 13–16	ASD	Mainstream school	Ireland
5. Haegele and Buckley (2019)	Experiences of Alaskan youths with visual impairments about physical education	Phenomenology	Semi-structured interviews	Thematic analysis	3 males and 1 female 11–16	Visual impairment	Public school	United States
6. Haegele and Zhu (2017)	Experiences of adults with visual impairments during school-based integrated physical education	Interpretive Phenomenological Analysis (IPA)	Semi-structured telephone interviews and reflective field notes	IPA	6 males and 10 females 21–48	Visual impairment	Public, private, and Catholic primary and high schools	United States and Canada
7. Haegele et al. (2017)	The meaning that (adult) elite athletes with visual impairments ascribe to their school-based physical education and sport experiences	Phenomenology	Semi-structured telephone interviews and reflective field notes	IPS	4 males 22–37	Visual impairment	Public and private primary and high schools	United States
8. Healy et al. (2013)	Perspectives of children with autism on their physical education	Not reported	Semi-structured interviews	Thematic analysis	11 males and 1 female 9–13	ASD	Mainstream primary school PE without support from a special needs assistant	Ireland
9. Hill (2014)	Lived experience of mainstream secondary school for young people with a diagnosis of Autistic Spectrum Disorder (ASD)	IPA	Photo elicitation discussions	IPA	6 young people (gender not reported) Secondary school (age not reported)	ASD	Mainstream secondary schools	England
10. Knorr and McIntyre (2016)	School and life experiences of adults diagnosed with (fetal alcohol spectrum disorders) FASD	Not reported	Semi-structured interviews	Not specified	2 males and 2 females 19–30	Fetal Alcohol Spectrum Disorders	No specific information on school settings	Canada
11. Lindsay and McPherson (2012)	Experiences of exclusion and bullying among children with cerebral palsy	Not reported	Semi-structured in-depth interviews and a focus group	Not specified	6 males and 9 females 8–19	Cerebral palsy	Integrated classroom (i.e., has both children with and without disabilities)	Canada
12. Mealings et al. (2017)	Experiences of students with TBI with their educational participation; how evidence from student-based experiences can be translated into practice relevant to the role of SLPs	Not reported	Semi-structured interviews	Grounded theory	3 males 13–17	TBI (severe, post-traumatic amnesia 25–51 days)	No specific information on school setting	Not reported (but authors are Australian)

(Continued)

TABLE 3 | Main characteristics of the studies selected for data extraction and synthesis.

Author		Study characteristic			Participant characteristic		Study setting	
	Phenomenon of interest	**Methodology**	**Method of data collection**	**Data analysis approach**	**Participants' gender and age (years)**	**Type of disability or SEN**	**Setting**	**Location of study**
13. Merrick and Roulstone (2011)	Experiences of communication and of speech-language pathology from the perspectives of children with speech, language, and communication needs	Grounded theory	Open-ended interviews with non-verbal activities such as drawing, taking photographs, and compiling a scrapbook	Grounded theory	7 males and 4 females 7–10	Speech, language, and communication needs	Mainstream schools	England
14. Neal and Frederickson (2016)	Perspectives of children with ASD who recently transitioned successfully into mainstream secondary schools	Not reported	Semi-structured interviews	Thematic Analysis	1 male and 5 females Year 7 (age not reported)	ASD	Mainstream secondary schools	United Kingdom
15. Ng et al. (2016)	Experiences of twice-exceptional students (students with giftedness and learning difficulties) during their transfer from middle school to high school	Not reported	Semi-structured interviews, journal entries made by the student participants, and school documentation relevant to the transfer process.	Categorical aggregation	1 male and 2 females 13	Twice-exceptional (giftedness accompanied by learning difficulties that hinder their ability to reach their potential in a traditional academic setting)	Coeducational high school	New Zealand
16. Opie (2018)	Education experiences of students with visual impairment in mainstream secondary schools	IPA	Semi-structured interviews	IPA	3 females and 4 males 17–19	Visual impairment and blindness	Mainstream secondary schools. 1 student was completing schooling at home *via* distance education after attending state (public) school, and the rest attended private schools	Australia
17. Opie et al. (2017)	Experiences of a student with vision impairment with mainstream schooling	IPA	Semi-structured interviews	IPA	1 male 18	Vision impairment	Mainstream secondary school	Australia
18. Opie and Southcott (2015)	Perspectives of a student with vision impairment about experiences in an inclusive educational setting	Single case study with IPA	Semi-structured interviews	IPA	1 male > 18 (year 12)	Vision impairment	Private boys' school	Australia
19. Poon et al. (2014)	Experiences of youth with High Functioning Autism in secondary schools	Not reported	In-depth semi-structured interviews	IPA	3 males and 1 female 14–16	ASD (high functioning)	Regular secondary schools	Singapore
20. Saggers et al. (2011)	Experiences of students with ASD in inclusive high schools	Not reported	Semi-structured interviews	Constant comparative methods	7 males and 2 females 13–16	ASD	Mainstream high school	Australia
21. Opie and Southcott (2016)	School experiences of a senior student with vision impairment	IPA	Semi-structured interviews	IPA	1 male final year or year 12 (age not reported)	Vision impairment	Private boys' college	Australia
22. Walker and Reznik (2014)	Children's perceptions of the impact of in-school asthma management on regular physical activity	Not reported	Individual interviews, artwork, observation, field notes	Thematic and content analysis	11 males and 12 females 8–10	Asthma	Public elementary schools	United States
23. Wang et al. (2013)	School-based lived experiences of Taiwanese adolescents with T1DM	Phenomenology	Semi-structured interviews	Not specified	8 males and 6 females Mean age 14.20 years (SD = 1.20 years)	T1DM	Public junior High schools	Taiwan
24. Wintels et al. (2018)	Personal participation experiences of adolescents with CP in daily life areas: school, sports, health care and work	Participatory research	Semi-structured interviews	Grounded theory	13 males and 10 females 12–17	CP	No specific information on school setting	Netherland

(Continued)

TABLE 3 | Main characteristics of the studies selected for data extraction and synthesis.

Author	Study characteristic			Participant characteristic		Study setting	
	Phenomenon of interest	Methodology	Method of data collection	Data analysis approach	Participants' gender and age (years)	Type of disability or SEN	Setting	Location of study
25. Yamamoto and Black (2015)	How culture, disability, and prospective first-generation college student status influence the transition decisions of native Hawaiian students with specific learning disabilities who attended a Hawaiian-focused charter school	Case study	Individualized semi-structured interviews, observations, collection and review of artifacts	Categorical aggregation	4 males and 1 female 14–17	Specific learning disability (SLD)	Hawaiian-focused charter school	Hawaii, United States
26. Zitomer (2016)	Perspectives of elementary school children with disabilities in inclusive dance education classrooms	Not reported	Semi-structured interviews, children's art- work, class observations, and research field notes	IPA	8 participants 6–10	Varied types of disabilities including autism spectrum disorder, neurodevelopmental disability, intellectual disabilities	Elementary schools	Canada
27. Zwicker et al. (2018)	Perspectives of children with DCD on their daily life and quality of life	Inductive realist approach	Semi-structured (individualized) interviews	Thematic Analysis	10 males and 3 females 8–12	Developmental coordination disorder (DCD)	No specific Information on schooling	Canada

preparedness for transitioning to high school; (v) students' friendships and peer interactions; and (vi) students' views of themselves. We were unable to categorize four findings as their concepts lacked similarity with other findings or categories. **Figure 2** through 7 visually represent the categories and the final synthesized statements. The figures also note the number of findings contributing to each category and the studies from **Table 3** to which they correspond.

Synthesis 1 – Teachers' and Education Workers' Attitudes and Supportiveness

Our first synthesized statement (**Figure 2**) reflects 14 findings grouped into three categories related to students' perceptions of the attitudes and supportiveness of teachers and other education workers. Students with disabilities and special needs appreciated the support and guidance they received from their teachers and other education workers and found it to be beneficial (*category 3, supported by four findings*). They wanted an appropriate level of support – not too much and not too little – and wanted it to be provided subtly. They viewed teachers' attitudes as significantly impacting their experiences at school (*category 1, supported by six findings*). The level of interest and care teachers showed in the students' education and welfare, and the degree of effort to include them in activities, affected the students' learning, enjoyment, and feelings of inclusion. Students also considered teachers' skills to be important, especially as these related to their teaching styles, strategies, and the level and quality of support they provided (*category 2, supported by four findings*). Skills such as knowledge of one's own teaching area, empathy, and knowledge and understanding of the students' strengths and needs were all considered to be positive and supportive characteristics. The synthesis of these three categories suggests that teachers and other education workers (for instance, teaching/education assistants and other school staff) should continue to provide support to students, paying close attention to helping all students feel included. It is important that teachers show interest and care for their students and make an effort to include them in activities with their peers. They can accomplish this by gaining an understanding of their students' strengths and needs, empathizing, and utilizing strategies to provide appropriate support subtly and when needed, so as not to make the students stand out and feel different.

Synthesis 2 – Education Workers' and Support Personnel's Implementation of Suitable Supports and Accommodations

Our second synthesized statement (**Figure 3**) reflects 16 findings grouped into four categories regarding students' perceptions about the suitability of supports and accommodations. Students mentioned being provided with some support at school, but the supports often were perceived to be inconsistent or inefficacious (*category 4, supported by seven findings*). Support and accommodations, when provided, lacked thoughtful integration with students' needs in mind. When students didn't feel they received the support to participate in activities as their peers participated, they felt inferior, disadvantaged, and

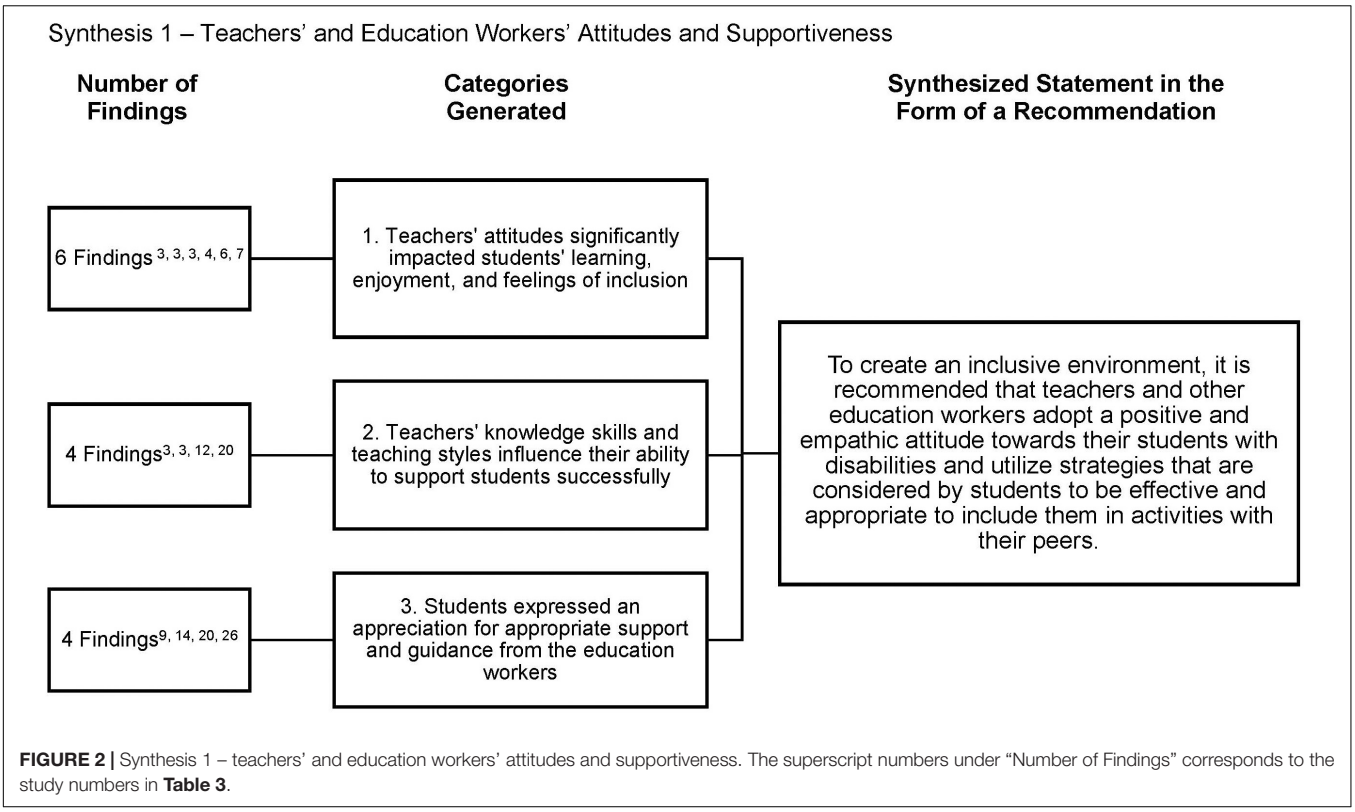

FIGURE 2 | Synthesis 1 – teachers' and education workers' attitudes and supportiveness. The superscript numbers under "Number of Findings" corresponds to the study numbers in **Table 3**.

excluded from school activities (*category 5, supported by five findings*). Students also expressed a lack of (expert) support with technology at school. They believed their teachers and other education workers needed to take a more active role in overseeing the implementation of technological interventions and accommodations for students (*category 6, supported by two findings*). Also, students often perceived tight work schedules and heavy workloads to be a problem. As a result, inflexibility of curriculum was perceived to be a barrier to enjoying school (*category 7, supported by two findings*). Together, the synthesis of these four categories suggests that to create an inclusive environment where students feel as though they are given the opportunity to participate as their peers do, accommodations need to be provided with students' needs and wants in mind. Specifically, students expect technological interventions that help them to be incorporated into daily school activities and activities to be adapted, where possible, to give them an opportunity to participate. This implies that these accommodations have to be provided consistently and effectively, without making the students feel uncomfortable. To be able to plan and achieve this successfully, education workers (e.g., teachers, principals, teaching/education assistants) and support personnel (e.g., special education teacher, speech-language pathologists, occupational therapists, etc.) need to start by having a good understanding of the student's strengths and needs. Then, they need to take responsibility to implement the interventions and supports, train staff and students to use the technology and troubleshoot, incorporate opportunities for support and accommodation into the curriculum, and actively use and monitor the interventions.

Synthesis 3 – Students' Need for Safe and Accommodating Physical Environments at School

Our third synthesized statement (**Figure 4**) reflects seven findings grouped into two categories focused on students' perceptions about the need for physical environments at school that feel safe and accommodate their needs. Students with autism spectrum disorder (ASD) expressed negative feelings about some physical environmental factors (e.g., noise, crowding, unfamiliar surroundings) and certain areas of the school *(category 8, supported by four findings*). The overwhelming feelings of anxiety and stress caused by these factors affected their learning and made inclusive school life harder. Students voiced an appreciation/need for personalized options for de-stressing (e.g., more breaks and a designated room or area to go to) (*category 9, supported by three findings*). Synthesizing these two categories suggests it is important that education workers and support personnel provide designated quiet room/space for students to use when they feel they need to relax and de-stress. Students would also benefit from frequent breaks, as needed, and a designated space to complete tasks that may be more stressful in other environments (e.g., exams). The availability of a "sanctuary" (Hill, 2014, p. 83) would provide all students with a consistent and familiar space away from the crowd, noise, and other stressful situations when needed.

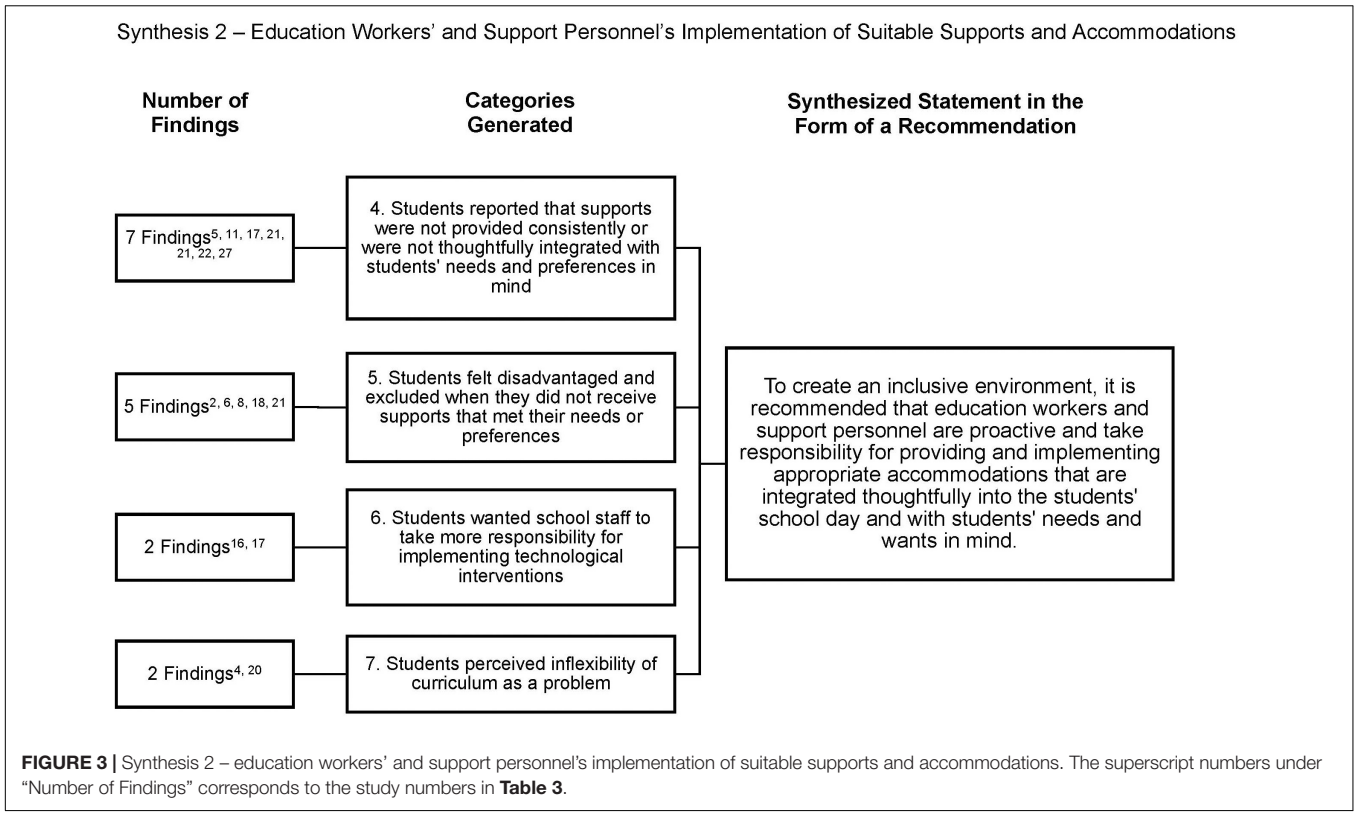

FIGURE 3 | Synthesis 2 – education workers' and support personnel's implementation of suitable supports and accommodations. The superscript numbers under "Number of Findings" corresponds to the study numbers in **Table 3**.

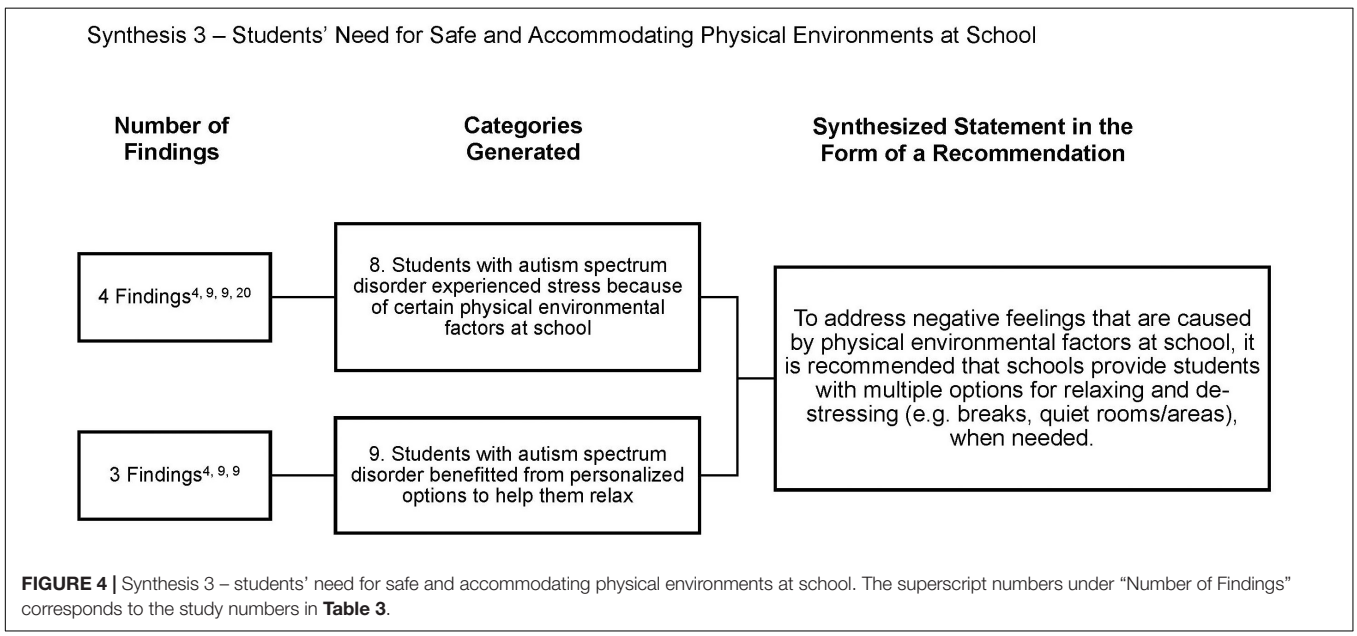

FIGURE 4 | Synthesis 3 – students' need for safe and accommodating physical environments at school. The superscript numbers under "Number of Findings" corresponds to the study numbers in **Table 3**.

Synthesis 4 – Students' Preparedness for Transitioning to High School

Our fourth synthesized statement (**Figure 5**) reflects 12 findings grouped into two categories related to students' perceptions about being prepared for the transition to high school. Students often needed reassurance about transitioning to high school (*category 10, supported by six findings*). Different approaches were considered helpful, such as: opportunities for school visits/tours, meeting the education team, gathering relevant information/advice, and families' support and knowledge. Discussions that focused on the negative aspects of transition or students' worries were considered unhelpful. Students identified many positive factors about transition to high school, such as friendships (even in the face of adversity), increased resources

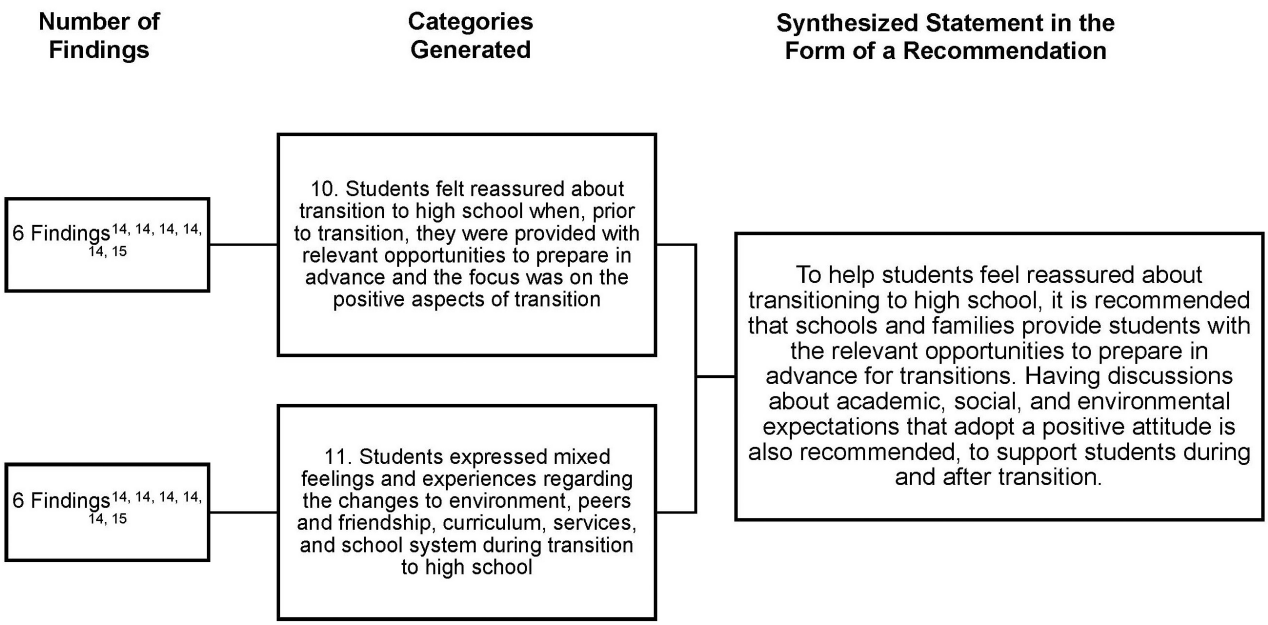

FIGURE 5 | Synthesis 4 – students' preparedness for transitioning to high school. The superscript numbers under "Number of Findings" corresponds to the study numbers in **Table 3**.

(e.g., larger libraries), level of organization, increased variation in curriculum, and opportunities to engage in lessons of interest. However, they also identified some aspects they found to be challenging, including securing special education services and the stigma surrounding it, changing timetable and teachers, disruptive classroom environments, and limited opportunities to demonstrate their learning strengths (*category 11, supported by six findings*). The synthesis of these two categories suggests that it is important for education workers, support personnel, and families to discuss transition with the student. Students would also benefit from being provided with opportunities to prepare in advance by visiting the new school, meeting the education team and having discussions with them. These discussions should address academic, social, and environmental expectations, be framed with a positive attitude, and continue after transition.

Synthesis 5 – Students' Friendships and Peer Interactions

Our fifth synthesized statement (**Figure 6**) reflects 26 findings grouped into three categories reflecting students' perceptions about their friends and peers. Friendship and peer interactions are important for students. However, their discomfort with socialization, restriction to participation, and situations where their "disability was pronounced" (Haegele and Zhu, 2017, p. 432) may affect these relationships (*category 12, supported by nine findings*). As a result, students without friendships and peer relationships are often at a disadvantage. Students cared about how their peers perceived them, which at times depended on the peers' knowledge and understandings of the conditions (*category 13, supported by nine findings*). They wanted to fit in and be accepted, and not appear different from their peers. This influenced the students' behaviors, such as decisions surrounding information disclosure and self-management tasks. They considered themselves to be more than just their conditions/labels. Some students described positive experiences with their peers, but many reported being bullied and some reported not being respected (*category 14, supported by eight findings*). They experienced verbal, social, and physical bullying because they were perceived to be different than their peers in how they looked and acted, and the students were often unable to respond to these circumstances. The synthesized statement generated from these three categories pertains to the centrality of recognizing the importance for students to fit in; this includes opportunities to interact with their peers without disabilities or special needs in an environment that nurtures respect and strong relationships, as well as flexibility in their curriculum and activities through options that would ensure students with disabilities have an opportunity to interact and build relationships with their classmates. Educators and families of all students should make an effort to normalize the need for accommodations and address bullying in a way that includes students with disabilities.

Synthesis 6 – Students' Views of Themselves

Our sixth and final synthesized statement (**Figure 7**) reflects 23 findings grouped into five categories reflecting students' perceptions about themselves. Students expressed unhappy

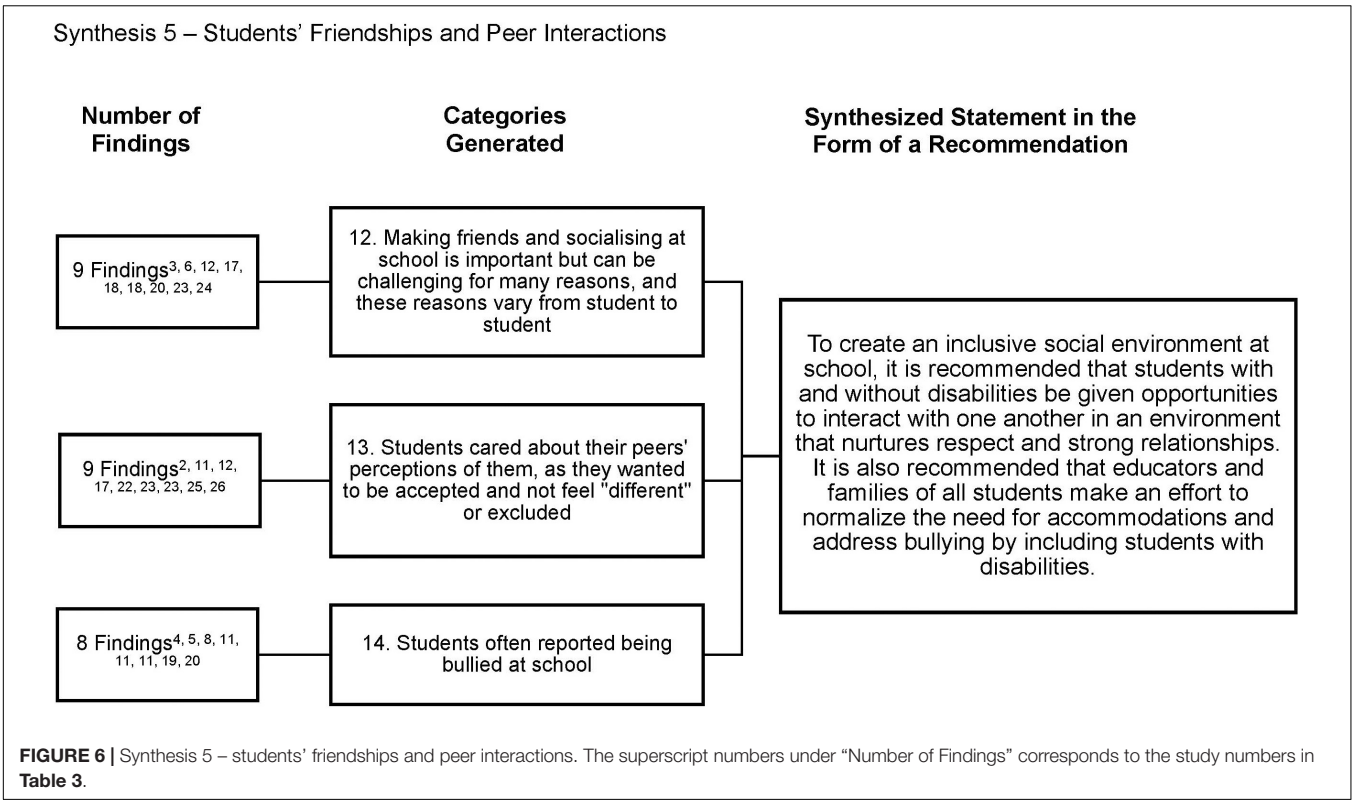

FIGURE 6 | Synthesis 5 – students' friendships and peer interactions. The superscript numbers under "Number of Findings" corresponds to the study numbers in **Table 3**.

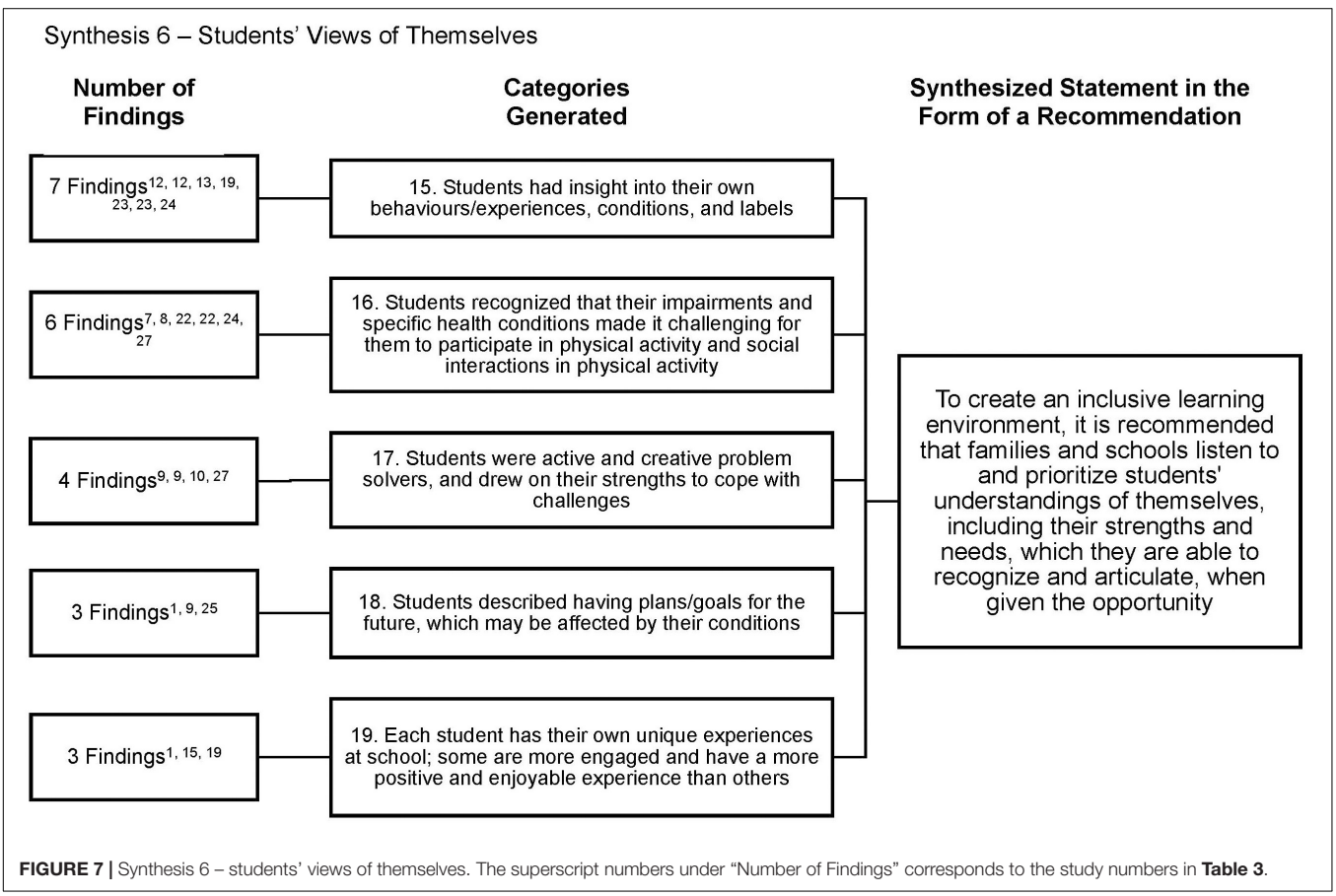

FIGURE 7 | Synthesis 6 – students' views of themselves. The superscript numbers under "Number of Findings" corresponds to the study numbers in **Table 3**.

feelings when describing their conditions and their limitations. They attributed their lack of participation in school physical activities and social interactions to the physical and cognitive limitations imposed by their conditions (*category 16, supported by six findings*). Participants seemed to understand and were able to articulate their positive and negative experiences surrounding their conditions (which are sometimes hidden), the associated labels, and their overall identity, as well as how these aspects of themselves affect, or are affected by, other factors (e.g., participation, classmates, teachers) and how those relate to their behaviors (*category 15, supported by seven findings*). Students developed strategies to solve their problems and cope with negative experiences, such as adopting activities that focus on their strengths, avoiding negative environmental factors (e.g., crowd and noise), and by tapping into their personal sources of strength and success (*category 17, supported by four findings*).

Furthermore, the students described having plans/goals for the future (vocational and educational) (*category 18, supported by three findings*). They discussed an emerging sense of independence, enthusiasm, and optimism, although these feelings and their plans/goals may be affected by their conditions. Each student has their own unique experiences at school; some are more engaged and have a more positive and enjoyable experience, while others may have more difficulty engaging in social and academic settings (*category 19, supported by three findings*). Nonetheless, the students have a good understanding of themselves, including their strengths and needs, which they were able to acknowledge. Hence, they were able to generate solutions to their problems and also plan for their futures. Thus, the overarching synthesized statement for these five categories pertains to the importance of giving students an opportunity to share their experiences, and to take these experiences into account, to create a more meaningful and inclusive learning environment.

DISCUSSION

This QES aimed to investigate the perspectives of children and youth with disabilities and special needs regarding their experiences in IE. We synthesized 27 primary qualitative studies to generate synthesized statements to guide practitioners and policy makers. The included studies were considered to be dependable, trustworthy, and congruent, and thus, of high methodological quality. The studies contributing to each synthesized statement include the perspectives of children and youth of various ages from different high-income countries. The only exception to this would be the fourth synthesized statement, which only applies to youth transitioning to high school. The educational needs and experiences of children and youth with different diagnoses and needs are also very similar in its essence. These shared experiences and needs are portrayed in the six synthesized statements and, ultimately, the recommendations presented in this section.

The overarching synthesized statements identify six areas related to the children and youths' school life: teachers' and education workers' attitudes and supportiveness, education workers' and support personnel's implementation of suitable supports and accommodations, students' need for safe and accommodating physical environments at school, students' preparedness for transitioning to high school, students' views of their friendships and peer interactions, and students' views of themselves. The six synthesized statements resulting from our meta-aggregation focus on specific areas that would help to create an inclusive school experience for all, and they also apply to specific stakeholders who would be best fit to address these matters. These stakeholders include, but are not limited to, teachers, principals and other education workers (e.g., teaching/education assistants, school staff), support personnel (e.g., special education teachers, specialist staff, speech-language pathologists, occupational therapists), and families.

Based on our findings, it is evident that strong leadership at the school level is fundamental to creating an inclusive school experience for students. This is because it is important for teachers and other education workers (e.g., teaching/education assistants), and support personnel to advocate for IE and take responsibility to include students appropriately within IE. Findings in our first and second synthesized statements emphasize the need for educators to understand students' strengths and needs to be able to provide supports appropriately; these findings support Hannes et al. (2018) findings regarding the importance of the competencies of teachers to create an inclusive learning environment. Additionally, students require their supports and accommodations to be consistent and effective as well as provided subtly and skillfully.

To provide strong leadership at the school level and support students appropriately in IE, educators and support personnel require adequate knowledge of IE, training to work in inclusive classrooms with students with diverse needs, as well as support from their colleagues with expertise in special education, the school board, and ministries of education (McCrimmon, 2015; Anaby et al., 2020). However, teachers do not always feel they have the necessary level of understanding of students' condition to provide them with the appropriate support (McCrimmon, 2015; Roberts and Simpson, 2016). Often, teacher preparation programs do not provide general education teachers with adequate training or experience to work with students with diverse needs (DeSimone and Parmar, 2006; Timmons, 2006; McCrimmon, 2015).

Accordingly, we would recommend that schools and school board leadership (e.g., superintendents), government agencies, and policy makers integrate knowledge needed to implement IE, including the students' perspectives, into training opportunities so that teachers are prepared to work effectively in an inclusive environment. Two potential approaches can be considered. One is to incorporate curricula on childhood disability and IE in the existing curriculum for teacher education that would serve to provide educators with the necessary knowledge and training (McCrimmon, 2015; Thompson et al., 2015; Specht et al., 2016). A second approach worth considering, especially for in-servicing teachers, are evidence-based professional development opportunities where educators can enhance their ability to create inclusive settings for students with various needs and effectively collaborate with other professionals (Florian, 2012; Nishimura,

2014; Thompson et al., 2015). This training will equip educators with skills and confidence to better understand and support learners with diverse needs (Lewis and Bagree, 2013; Specht et al., 2016).

Throughout our synthesis, it has been evident that students, regardless of their conditions and needs, require and expect a level of flexibility in their academic curriculum, other school activities, and their supports and accommodations. As is evident from our second and third synthesized statements, students prefer to have options for support and accommodations as well as individualized support that considers their needs and wants and does not set them apart from their peers. The latter finding is further emphasized in our fifth synthesized statement, where it is stressed that students want and expect to be included in activities with their peers; a lack of appropriate support and accommodation can make students feel isolated from their peers. These observations further support Hannes et al. (2018) finding regarding the importance of individualized support.

Following from our findings, we would recommend educators create a flexible learning environment where all students feel included and appropriately supported by designing curricula lessons using accessible education frameworks such as universal design for learning (UDL) (CAST, 2018). The principles of UDL can be applied to the design of instructional materials and learning environment modifications (Edyburn, 2005; CAST, 2018). UDL can be utilized in tandem with assistive technologies to reduce barriers for students with disabilities and special needs, while also benefiting all other students. By accounting for students' strengths and needs, UDL provides flexibility in the way students access and engage with information and demonstrate their knowledge (CAST, 2018). Therefore, designing curricula using UDL, with the diversity of the student body in mind, can provide students with opportunities not only to strengthen relationships with their peers, but also to develop and demonstrate their strengths and competency, encouraging inclusion. Further, UDL encourages educators to plan how content can be delivered with scaffolds for all students, rather than isolating students from their peers based on the specific supports they need, thereby reducing social isolation and stigmatization (Learning Disabilities Association of Ontario, 2014; Venkatesh, 2015).

To achieve our recommendation that educators create flexible learning environments, it is vital for educators to have knowledge and understanding of their students, as well as have adequate knowledge and training to implement UDL and other necessary evidence-based practices to create an inclusive learning environment. UDL has been embraced by many educators and government agencies in Canada (Ontario Ministry of Education, 2013; Kennedy et al., 2018). However, these strategies clearly could be reinforced and further supported, especially with respect to implementation.

Our synthesis of the perspectives of children and youth with disabilities and special needs provided rich descriptions and illustrations about these children's school experiences that were not captured in previous syntheses about IE. Of the 27 primary studies included in our synthesis, only four focused on the perspectives of adults regarding their school experiences; most of our findings and generated recommendations are driven by the insights of children and youth attending elementary, middle, and high schools. Thus, it is evident that children and youth, regardless of the type of disabilities/special needs or age, have a profound understanding of their conditions and its effects on their lives; they understand their strengths, needs, the aspects of their school that work well for them, and ones that do not; and they are able to articulate these when given the right opportunities. For example, in our fourth synthesized statement, students articulated their experience during and after transition to high school. Their concerns during this period are similar to those of students without disability and special needs (Zeedyk et al., 2003; Smith et al., 2008; Benner, 2011; Neal and Frederickson, 2016). But students with disabilities and special needs do not always find all efforts to be helpful, as described in our fourth synthesis. The participants in these original studies indicated a desire and appreciation for strategically implemented supports for transition that address the procedural, academic, social, and environmental aspects in a way that they perceive to be relevant and meet their needs by employing a positive outlook. This finding, along with our sixth statement, further highlights the insights that these children and youth can provide about their experiences and emphasizes the importance of listening to and including their voices.

Therefore, we would recommend families, teachers, principals, and other education workers afford students of all ages and abilities opportunities to voice their experiences and perceptions regarding their learning, social, and environmental needs, and to include them in processes that they are knowledgeable about and that affect them. Students need to be involved in processes of planning, developing, and implementation of measures meant to improve IE, including supports and accommodations for themselves, intervention, and training for their teachers to make their schools inclusive.

Strengths and Limitations of the Review

A notable strength of our meta-aggregative review is that within our own review process, we ensured quality and trustworthiness in several ways. We ensured credibility through engaging multiple trained reviewers during article screening, selection, and data extraction processes as well as addressing confirmability and dependability through peer debriefings and audit trails. Such strategies served to enhance confidence that the outcomes of our synthesis were not based on any single reviewer's particular viewpoints or preferences but were clearly derived from the data. Further, our meta-aggregative review updated and extended the work of Hannes et al. (2018) in the following ways: (1) by including recent literature, published between 2011 and 2019, which was not included in Hannes and colleagues' literature search; (2) by developing a more comprehensive search strategy by using a wide range of search terms and searching more databases; and (3) by ensuring the methodological quality of included studies.

With respect to methodological quality, although critical appraisal ensured that our synthesis and recommendations were based on evidence from methodologically sound research, two-thirds of eligible studies were excluded during this process. There

is ongoing debate on whether quality assessments should be applied to QES, what criteria should distinguish high quality research from others, and what should be done with moderate or lower quality studies (Hannes et al., 2010). One suggestion Hannes et al. (2018) offered is to perform a sensitivity analysis, meaning reviewers examine whether the exclusion of evidence from lower quality studies has any influence on the results of the synthesis. This was not feasible in our case, as we had 90 eligible studies. Hence, our final decision to advance 29 of the highest quality studies from this phase was determined by the need for rigor and trustworthiness, as we were seeking to advance knowledge and inform action, as well as by the reasonably robust number of articles from which we could choose. However, it is not possible for us to know if some important findings were missed because of this decision.

Another potential limitation of our review is that we included only studies from high income countries. Thus, the results of our synthesis may not be transferable to the educational contexts of lower-and-middle-income countries (LMICs). Because the educational contexts of LMICs may differ significantly from those of high-income countries, it did not seem appropriate to synthesize data from both contexts in one review. Finally, although our synthesis results are transferable to children and youth of various school ages, conditions, and special needs, only one study included participants with intellectual disabilities, specifically fetal alcohol spectrum disorder (Knorr and McIntyre, 2016). Students with intellectual disabilities attend "inclusive" schools, and they experience various barriers when accessing their education (Reid et al., 2018). Thus, the school experiences of children and youth with intellectual disabilities, from their own perspectives, still require further research.

Future Research

The first step to understanding IE, as a whole, and improving the implementation of IE, is to consolidate evidence regarding IE from different perspectives. Consolidating the findings of our meta-aggregative review with experiences of families, teachers and other educators, support staff, peers, as well as what families report about their children's experience can provide a clearer and more complete image of IE, including what works well, what needs to change, and at what level the change needs to occur. Hence, an umbrella review, or overview of reviews, is a logical and appropriate next step. An umbrella review would allow for the comparison and contrasting of the experiences in IE from different stakeholders' perspective, providing a broader picture on this topic.

Additionally, it is necessary to consider experiences and perceptions of children and youth, from their perspectives, as in the findings of this review, to ensure that future initiatives are more suitable for all children and youth, including those with disabilities. Hence, future research might also explore how to engage children and youth, especially those with disabilities and special needs, when planning and developing resources, curricula, training/educational material relevant to IE. Children's experiences from their perspectives not only broaden collective understandings, but also provide unique insights that are necessary, along with knowledge of others' perspectives on IE, to improve evidence-based practice in IE. These initiatives and our resulting recommendations for action can serve to better support students with disabilities, educators, school support personnel, and families in IE.

CONCLUSION

It has been well established that IE is more than simply the practice of providing students with access to general education; rather, it is the way schools, activities, and programs are designed to respond to individual learning needs by providing sufficient support and removing barriers to participation for all students. Yet, students face a number of barriers in accessing their education in inclusive settings. The findings from this meta-aggregative review suggest that: (i) there is a need for strong leadership in IE at the school level, which government agencies, university pre-professional programs, and school board leadership can cultivate by creating opportunities for educators to train and collaborate with other professionals; (ii) flexibility is necessary in curriculum, instruction, and the school environment, for which training and experience is needed; and (iii) it is important to prioritize students' voices, as they have a profound understanding of their strengths and needs, as well as their conditions and how they affect their lives. These findings should be taken into consideration when planning/developing curricula and activities for students, as well as education and training materials for educators and support staff.

AUTHOR CONTRIBUTIONS

TP, WC, BD, and PR contributed to the conception and design of the study. TP, PC, AJ, and EK worked as team to refine inclusion and exclusion criteria and completed the article screening and selection process with guidance from WC. TP, PC, and AJ critically appraised articles selected after full-text review and the final set of included articles was made in consultation with WC. TP extracted and synthesized findings with guidance from WC and in consultation with PC and AJ. TP wrote the first draft of the manuscript. WC, BD, and PR provided feedback and guidance on manuscript revisions. All authors read, provided feedback on, and approved the submitted version of the manuscript.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/feduc.2022.864752/full#supplementary-material

REFERENCES

Anaby, D. R., Ianni, L., Héguy, L., and Camden, C. (2020). Actual and ideal roles of school staff to support students with special needs: current needs and strategies for improvement. *Support Learn.* 35, 326–345. doi: 10.1111/1467-9604.12313

Benner, A. D. (2011). The transition to high school: current knowledge, future directions. *Educ. Psychol. Rev.* 23, 299–328. doi: 10.1007/s10648-011-9152-0

Canadian Research Centre on Inclusive Education (n.d.). *Understanding Inclusive Education*. Available online at: https://inclusiveeducationresearch.ca/about/inclusion.html (accessed September 13, 2020)

CAST (2018). *Universal Design for Learning Guidelines Version 2.2*. Available online at: http://udlguidelines.cast.org

Committee on the Rights of Persons with Disabilities (2016). *General Comment no. 4 on the Right to Inclusive Education*. Geneva: Office of the United Nations High Commissioner for Human Rights.

Cosier, M., Causton-Theoharis, J., and Theoharis, G. (2013). Does access matter? time in general education and achievement for students with disabilities. *Remedial Special Educ.* 34, 323–332. doi: 10.1177/0741932513485448

Critical Appraisal Skills Program [CASP] (2018). *CASP Qualitative Checklist*. Pune: CASP

de Boer, A., Pijl, S. J., and Minnaert, A. (2012). Students' attitudes towards peers with disabilities: a review of the literature. *Int. J. Disability Dev. Educ.* 59, 379–392. doi: 10.1080/1034912X.2012.723944

Dell'Anna, S., Pellegrini, M., and Ianes, D. (2019). Experiences and learning outcomes of students without special educational needs in inclusive settings: a systematic review. *Int. J. Inclusive Educ.* 25, 944–959. doi: 10.1080/13603116.2019.1592248

DeSimone, J. R., and Parmar, R. S. (2006). Middle school mathematics teachers' beliefs about inclusion of students with learning disabilities. *Learn. Disabilities Res. Practice* 21, 98–110. doi: 10.1111/j.1540-5826.2006.00210.x

Edyburn, D. L. (2005). Universal design for learning. *Special Educ. Technol. Practice* 7, 16–22.

Falvey, M. A., and Givner, C. C. (2005). "Chapter 1. what is an inclusive school?," in *Creating an Inclusive School*, 2nd Edn, eds R. A. Villa and J. S. Thousand (Alexandria, VA: Association for Supervision & Curriculum Development).

Florian, L. (2012). Preparing teachers to work in inclusive classrooms: key lessons for the professional development of teacher educators from Scotland's inclusive practice project. *J. Teacher Educ.* 63, 275–285. doi: 10.1177/0022487112447112

Flower, A., McKenna, J. W., Haring, C. D., and Pazey, B. (2015). School-to-life transition: perceptions of youth in behavior intervention programs. *Preventing School Failure: Alternative Educ. Children Youth* 59, 217–226. doi: 10.1080/1045988X.2014.917602

Gaskin, C. J., Andersen, M. B., and Morris, T. (2012). Physical activity in the life of a woman with cerebral palsy: physiotherapy, social exclusion, competence, and intimacy. *Disability Soc.* 27, 205–218. doi: 10.1080/09687599.2011.644931

Gibbs, K. (2018). Australian adolescent boys with attention deficit/hyperactivity disorder (AD/HD): teacher and teaching factors that assess the efficacy of reducing unwanted behaviours within the classroom environment. *Australian J. Learn. Difficulties* 23, 53–65. doi: 10.1080/19404158.2017.1393626

Goodall, C. (2019). 'There is more flexibility to meet my needs': educational experiences of autistic young people in mainstream and alternative education provision. *Support Learn.* 34, 4–33. doi: 10.1111/1467-9604.12236

Haegele, J. A., and Buckley, M. (2019). Physical education experiences of Alaskan youths with visual impairments: a qualitative inquiry. *J. Visual Impairment Blindness* 113, 57–67. doi: 10.1177/0145482X18818614

Haegele, J. A., and Zhu, X. (2017). Experiences of individuals with visual Impairments in integrated physical education: a retrospective study. *Res. Quarterly Exercise Sport* 88, 425–435. doi: 10.1080/02701367.2017.1346781

Haegele, J. A., Zhu, X., and Davis, S. (2017). The meaning of physical education and sport among elite athletes with visual impairments. *Eur. Phys. Educ. Rev.* 23, 375–391. doi: 10.1177/1356336X16650122

Hannes, K., Lockwood, C., and Pearson, A. (2010). A comparative analysis of three online appraisal instruments' ability to assess validity in qualitative research. *Qual. Health Res.* 20, 1736–1743. doi: 10.1177/1049732310378656

Hannes, K., Petry, K., and Heyvaert, M. (2018). The meta-aggregative approach to qualitative evidence synthesis: a worked example on experiences of pupils with special educational needs in inclusive education. *Int. J. Res. Method Educ.* 41, 291–305. doi: 10.1080/1743727X.2017.1299124

Hannes, K., Raes, E., Vangenechten, K., Heyvaert, M., and Dochy, F. (2013). Experiences from employees with team learning in a vocational learning or work setting: a systematic review of qualitative evidence. *Educ. Res. Rev.* 10, 116–132. doi: 10.1016/j.edurev.2013.10.002

Healy, S., Msetfi, R., and Gallagher, S. (2013). 'Happy and a bit nervous': the experiences of children with autism in physical education. *Br. J. Learn. Disabilities* 41, 222–228. doi: 10.1111/bld.12053

Hehir, T., Grindal, T., and Eidelman, H. (2012). *Review of Special Education in the Commonwealth of Massachusetts*. Malden, MA: Massachusetts Department of Elementary and Secondary Education.

Hill, L. (2014). 'Some of it I haven't told anybody else': using photo elicitation to explore the experiences of secondary school education from the perspective of young people with a diagnosis of autistic spectrum disorder. *Educ. Child Psychol.* 31, 79–89.

Inclusive Education Canada (n.d.). *What is Inclusive Education?*. Available online at: https://inclusiveeducation.ca/about/what-is-ie/.

Kennedy, J., Missiuna, C., Pollock, N., Wu, S., Yost, J., and Campbell, W. (2018). A scoping review to explore how universal design for learning is described and implemented by rehabilitation health professionals in school settings. *Child Care Health Dev.* 44, 670–688. doi: 10.1111/cch.12576

Kivunja, C., and Kuyini, A. B. (2017). Understanding and applying research paradigms in educational contexts. *Int. J. Higher Educ.* 6, 26–41. doi: 10.5430/ijhe.v6n5p26

Knorr, L., and McIntyre, L. J. (2016). Resilience in the face of adversity: stories from adults with fetal alcohol spectrum disorders. *Exceptionality Educ. Int.* 26, 53–75. doi: 10.5206/eei.v26i1.7735

Korstjens, I., and Moser, A. (2018). Series: practical guidance to qualitative research. Part 4: trustworthiness and publishing. *Eur. J. General Practice* 24, 120–124. doi: 10.1080/13814788.2017.1375092

Learning Disabilities Association of Ontario (2014). *Universal Design for Learning (UDL). LD@school*. Ottawa, ON: Learning Disabilities Association of Ontario.

Leonardi, M., Bickenbach, J., Ustun, T. B., Kostanjsek, N., and Chatterji, S. (2006). The de?nition of disability: what is in a name? *Lancet* 368, 1219–1221. doi: 10.1016/S0140-6736(06)69498-1

Lewis, I., and Bagree, S. (2013). *Teachers for All: Inclusive Teaching for Children with Disabilities*. Belgium: International Disability and Development Consortium.

Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P. A., et al. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: explanation and elaboration. *BMJ* 339:b2700. doi: 10.1136/bmj.b2700

Lindsay, S., and McPherson, A. C. (2012). Experiences of social exclusion and bullying at school among children and youth with cerebral palsy. *Disabil. Rehabil.* 34, 101–109. doi: 10.3109/09638288.2011.587086

Lockwood, C., Munn, Z., and Porritt, K. (2015). Qualitative research synthesis: methodological guidance for systematic reviewers utilizing meta-aggregation. *Int. J. Evidence-Based Healthcare* 13, 179–187. doi: 10.1097/XEB.0000000000000062

Lockwood, C., Porritt, K., Munn, Z., Rittenmeyer, L., Salmond, S., Bjerrum, M., et al. (2020). "Chapter 2: systematic reviews of qualitative evidence," in *JBI Manual for Evidence Synthesis*, eds E. Aromataris and Z. Munn (Adelaide, SA: JBI).

Mack, N., Woodsong, C., MacQueen, K. M., Guest, G., and Namey, E. (2005). *Qualitative Research Methods: A Data Collector's Field Guide*. Durham, NC: Family Health International.

McCrimmon, A. W. (2015). Inclusive education in Canada: issues in teacher preparation. *Int. School Clin.* 50, 234–237. doi: 10.1177/1053451214546402

McTavish, J. R., Kimber, M., Devries, K., Colombini, M., MacGregor, J. C. D., Wathen, C. N., et al. (2017). Mandated reporters' experiences with reporting child maltreatment: a meta-synthesis of qualitative studies. *BMJ Open* 7:e013942. doi: 10.1136/bmjopen-2016-013942

Mealings, M., Douglas, J., and Olver, J. (2017). Beyond academic performance: practice implications for working with students following traumatic brain injury. *Int. J. Speech-Language Pathol.* 19, 441–453. doi: 10.1080/17549507.2016.1221453

Merriam-Webster. (2020). *Special needs. in Merriam-Webster.com dictionary*. Available online at: https://www.merriam-webster.com/dictionary/special%20needs (accessed August 6, 2020)

Merrick, R., and Roulstone, S. (2011). Children's views of communication and speech-language pathology. *Int. J. Speech-Lang. Pathol.* 13, 281–290. doi: 10.3109/17549507.2011.577809

Mitchell, D. (2010). Education that Fits: Review of International Trends in the Education of Students with Special Educational Needs. Christchurch: Education Counts. Available online at: https://www.educationcounts.govt.nz/data/assets/pdf_file/0016/86011/Mitchell-Review-Final.pdf

Neal, S., and Frederickson, N. (2016). ASD Transition to mainstream secondary: a positive experience? *Educ. Psychol. Practice* 32, 355–373. doi: 10.1080/02667363.2016.1193478

New Brunswick Association for Community Living (n.d.). *Inclusive Education and its Benefits*. Available online at: https://nbacl.nb.ca/module-pages/inclusive-education-and-its-benefits/.

Ng, S. J., Hill, M. F., and Rawlinson, C. (2016). Hidden in plain sight: the experiences of three twice-exceptional students during their transfer to high school. *Gifted Child Quarterly* 60, 296–311. doi: 10.1177/0016986216656257

Nishimura, T. (2014). Effective professional development of teachers: a guide to actualizing inclusive schooling. *Int. J. Whole School.* 10, 19–42.

Ontario Ministry of Education (2013). *Learning for all: A Guide to Effective Assessment and Instruction for all Students, Kindergarten to Grade 12*. Toronto, ON: Ontario Ministry of Education.

Opie, J. (2018). Technology today: inclusive or exclusionary for students with vision impairment? *Int. J. Disabil. Dev. Educ.* 65, 649–663. doi: 10.1080/1034912X.2018.1433294

Opie, J., and Southcott, J. (2015). Schooling through the eyes of a student with vision impairment. *Int. J. School Disaffect.* 11, 67–80. doi: 10.18546/ijsd.11.2.04

Opie, J., and Southcott, J. (2016). Establishing equity and quality: the experience of schooling from the perspective of a student with vision impairment. *Int. J. Whole Schooling* 12, 19–35.

Opie, J., Southcott, J., and Deppeler, J. (2017). "It helps if you are a loud person": listening to the voice of a school student with a vision impairment. *Qual. Report* 22, 2369–2384.

Parekh, G., and Brown, R. S. (2019). Changing lanes: the relationship between special education placement and students' academic futures. *Educ. Policy* 33, 111–135. doi: 10.1177/0895904818812772

Pearson, A., Robertson-Malt, S., and Rittenmeyer, L. (2011). *Synthesizing Qualitative Evidence*. Philadelphia, PA: Lippincott Williams & Wilkins.

Poon, K. K., Soon, S., Wong, M.-E., Kaur, S., Khaw, J., Ng, Z., et al. (2014). What is school like? perspectives of Singaporean youth with high-functioning autism spectrum disorders. *Int. J. Inclusive Educ.* 18, 1069–1081. doi: 10.1080/13603116.2012.693401

Reid, L., Bennett, S., Specht, J., White, R., Somma, M., Li, X., et al. (2018). *If Inclusion Means Everyone, Why Not Me?* North York, ON: Community Living Ontario.

Roberts, J., and Simpson, K. (2016). A review of research into stakeholder perspectives on inclusion of students with autism in mainstream schools. *Int. J. Inclusive Educ.* 20, 1084–1096. doi: 10.1080/13603116.2016.1145267

Saggers, B., Hwang, Y.-S., and Mercer, K. L. (2011). Your voice counts: listening to the voice of high school students with autism spectrum disorder. *Australasian J. Special Educ.* 35, 173–190. doi: 10.1375/ajse.35.2.173

Salend, S. J., and Duhaney, L. M. G. (1999). The impact of inclusion on students with and without disabilities and their educators. *Remedial Special Educ.* 20, 114–126. doi: 10.1177/074193259902000209

Smith, J. S., Akos, P., Lim, S., and Wiley, S. (2008). Student and stakeholder perceptions of the transition to high school. *High School J.* 91, 32–42. doi: 10.1353/hsj.2008.0003

Specht, J., McGhie-Richmond, D., Loreman, T., Mirenda, P., Bennett, S., Gallagher, T., et al. (2016). Teaching in inclusive classrooms: efficacy and beliefs of Canadian preservice teachers. *Int. J. Inclusive Educ.* 20, 1–15. doi: 10.1080/13603116.2015.1059501

Szumski, G., Smogorzewska, J., and Karwowski, M. (2017). Academic achievement of students without special educational needs in inclusive classrooms: a meta-analysis. *Educ. Res. Rev.* 21, 33–54. doi: 10.1371/journal.pone.0218633

The World Bank (n. d.). *World Bank Country, and. (Lending)Groups*. Available online at: https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups (accessed August 1, 2019)

Thompson, S. A., Lyons, W., and Timmons, V. (2015). Inclusive education policy: what the leadership of Canadian teacher associations has to say about it. *Int. J. Inclusive Educ.* 19, 121–140. doi: 10.1080/13603116.2014.908964

Thorne, S. (2000). Data analysis in qualitative research. *Evid. Based Nurs.* 3, 68–70.

Timmons, V. (2006). Impact of a multipronged approach to inclusion: having all partners on side. *Int. J. Inclusive Educ.* 10, 469–480. doi: 10.1080/13603110500392726

Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K. K., Colquhoun, H., Levac, D., et al. (2018). PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. *Ann. Intern. Med.* 169, 467–473.

United Nations Division for Social Policy and Development and Department of Economic and Social Affairs (2016). *Toolkit on disability for Africa: Inclusive Education*. New York, NY: United Nations

United Nations Educational, Scientific and Cultural Organization (1994). *The Salamanca Statement and Framework for Action on Special Needs Education*. Paris: United Nations Educational, Scientific and Cultural Organization

United Nations International Children's Emergency Fund [UNICEF] (2017). *Inclusive Education: Understanding Article 24 of the Convention on the Rights of Persons with Disabilities*. New York, NY: UNICEF.

Venkatesh, K. (2015). *Universal Design for Learning as a Framework for Social Justice: A Multi-Case Analysis of Undergraduate Pre-Service Teachers*. Doctoral dissertation, Chestnut Hill, MA: Boston College University Libraries.

Veritas Health Innovation (2020). *Covidence Systematic Review Software*. Melbourne, VIC: Veritas Health Innovation.

Walker, T. J., and Reznik, M. (2014). In-school asthma management and physical activity: children's perspectives. *J. Asthma* 51, 808–813. doi: 10.3109/02770903.2014.920875

Wang, Y. L., Brown, S. A., and Horner, S. D. (2013). The school-based lived experiences of adolescents with type 1 diabetes. *J. Nursing Res.* 21, 235–243. doi: 10.1097/jnr.0000000000000003

Wintels, S. C., Smits, D.-W., van Wesel, F., Verheijden, J., and Ketelaar, M. (2018). How do adolescents with cerebral palsy participate? learning from their personal experiences. *Health Expect.* 21, 1024–1034. doi: 10.1111/hex.12796

World Health Organization [WHO] (2011). *World Report on Disability*. Geneva: WHO.

Yamamoto, K. K., and Black, R. S. (2015). Standing behind and listening to Native Hawaiian students in the transition process. *Career Dev. Transition Exceptional Individuals* 38, 50–60. doi: 10.1177/2165143413498412

Yu, S. Y., Ostrosky, M. M., and Fowler, S. A. (2012). Measuring young children's attitudes toward peers with disabilities: highlights from the research. *Topics Early Childhood Special Educ.* 32, 132–142. doi: 10.1177/0271121412453175

Zeedyk, M. S., Gallacher, J., Henderson, M., Hope, G., Husband, B., and Lindsay, K. (2003). Negotiating the transition from primary to secondary school: perceptions of pupils, parents and teachers. *School Psychol. Int.* 24, 67–79. doi: 10.1177/0143034303024001010

Zitomer, M. R. (2016). 'Dance makes me happy': experiences of children with disabilities in elementary school dance education. *Res. Dance Educ.* 17, 218–234. doi: 10.1080/14647893.2016.1223028

Zwicker, J. G., Suto, M., Harris, S. R., Vlasakova, N., and Missiuna, C. (2018). Developmental coordination disorder is more than a motor problem: children describe the impact of daily struggles on their quality of life. *Br. J. Occup. Ther.* 81, 65–73. doi: 10.1177/0308022617735046

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CONCEPTUAL ANALYSIS
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What Counts as Evidence in the Understanding of School Exclusion in England?

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Exclusion from school can be regarded as a seemingly simple but in fact a rather complex intervention in response to the "wicked problem" of behavior in schools. This manuscript will discuss what counts as evidence that may used to inform policy and judgments on practices of exclusion. The role of evidence, and how this is measured, has long been an issue of contention in educational research. This is particularly true for research that focuses on educational inequality and inclusion or exclusion. In this manuscript we will discuss issues concerning evidence with respect to two aspects of exclusion in England. Firstly, we will focus on questions concerning the scale of the problem, examining both the statistical evidence of official exclusions and data concerning the myriad of ways in which children may experience other forms of exclusion. Taken together, this indicates an under-estimate of the numbers of young people missing an education. We then move to a consideration of the evaluation of means of reducing exclusion, arguing for a shift from an individual to a systemic in context account that recognizes the role of cultural transmission and cultural historical theory.

Keywords: school exclusion, inclusion, evidence, missing education, inequality

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INTRODUCTION

An essential pre-requisite of inclusion is presence or access to education. Indeed, for many developing countries enabling every child to go to school is a shared international goal. UNESCO (2020) describes inclusion as "non-negotiable." While we would argue that presence on its own does not equate to inclusion, it does provide the possibility or potential for different futures. Conversely, school exclusion is and always has been a consequence of disadvantage and it gives rise to inequalities both social and economic (Daniels and Cole, 2010; Riddell and McCluskey, 2012; Power and Taylor, 2013; Scottish Government, 2017; Thompson, 2017). It is cause for concern worldwide given that exclusion can exacerbate social fragmentation and even give rise to conflict (UNESCO, 2018). O'Donovan et al. (2015) discuss attempts in Australia to reduce exclusion as do Ainscow et al. (2013) more generally. Detailed scrutiny reveals that the political and policy frameworks in a nation state shape the forms which exclusion takes. This is shown clearly by Zancajo (2019) in the case of Chile, Leung et al. (2021) with respect to the exclusion of young mainland Chinese students in Hong Kong Schools, Muderedzi and Ingstad (2011) in Zimbabwe and Bademci et al. (2016) in Turkey. In this manuscript we discuss evidence about exclusion in the English context.

Moll (2000) has shown how children and young people acquire situated competences (skills, values, and knowledge) from what he terms the funds of the community of which they are part through the everyday activities which occur in the particular cultural, social, and historical contexts in which these communities are located. Exclusion from school, in its myriad of different forms, disrupts this process. Our argument aligns with Sen's (1992) capability and rights based approach to the broader concept of social exclusion. The suggestion is that intervention should ensure that all citizens have equal access to the benefits of participation in society (Sen, 1992). This approach to work on social exclusion, is important in that it points to the dangers of the denial of human rights that is associated with restrictions on participation in society at large. It is also important because it does not suggest that one size fits all – it is not an argument for uniformity and sameness rather it points to the celebration of diversity. This understanding of diversity rests on the assumption that different individuals will make use of opportunities in different ways.

Exclusion from school may be regarded as both a prior and outcome of social exclusion. Young people who are excluded often come from disadvantaging circumstances. Exclusion from school frequently has long term negative consequences in terms of gaining access to the benefits of a position in the mainstream of society. An understanding of the extent of the problem is important in bringing to the attention of public and policy makers a key feature in the processes of social exclusion and marginalization. Exclusion from school can be also regarded as a seemingly simple but, in fact, a rather complex intervention in response to the "wicked problem" of behavior in schools (Armstrong, 2018).

This manuscript will discuss what counts as evidence that may be used to inform policy and judgments on practices of exclusion. The role of evidence, and how this is measured, has long been an issue of contention in educational research. This is particularly true for research that focuses on educational inequality (e.g., Luke et al., 2010) and inclusion or exclusion (e.g., Florian, 2014; Kauffman and Hornby, 2020). We will argue that a practice as important as exclusion from school has proved remarkably difficult to document and calibrate, not least because of difficulties in defining exclusion in a manner that reflects what is happening in schools. There is a need to go beyond a simple interrogation of the validity and reliability of the data. We argue that making sense of "evidence" can only be done with reference to policy, at national and local level. Rather than seeking to examine the evidence base to policy we are contending that the policy, in turn, impacts on the quality of the evidence. This can be viewed as a reversal, or at least a prior, to the government rhetoric of drawing on a range of evidence to inform policy. Evidence can only be evaluated within context, often within competing agendas and perverse incentives. As Slee (2019) argues "policy represents values, choice making and authorization (909)." Absence of policy leads to absence of data and absence of data leads to a lack of accountability systems of the effectiveness of policy. In the context of exclusion, children can simply go missing with their presence, or indeed absence, and their futures unmonitored. The numbers of children missing from registered schooling raises important questions about the notion of a "mainstream" education and its fit for purpose. Here we identify gaps in evidence and reflect on their relationship to policy and the implications for intervention and its evaluation.

EVIDENCE GAPS THAT PERSIST OVER TIME

Over 20 years ago, Vulliamy and Webb (2001) suggested that data on exclusions can be recontextualized and even distorted by schools. In their research they identified differences between the actual and recorded reason(s) for exclusion. In particular they note considerable underestimations of official exclusion figures compared to the number of pupils actually excluded from school. Many of their concerns appear to have persisted over the intervening years and reveal the unintended consequences of policies that have contributed to the unreliability of the data.

The reduction in recorded permanent exclusions in England during 1997–2000 was explained by a number of headteachers resorting to "grey" exclusions in an attempt to avoid financial penalties and to meet ambitious national targets (Daniels and Cole, 2010). These included "managed transfers," which often do not appear on orthodox means of keeping a record of events (Munn et al., 2000; Osler et al., 2001). A problem of "unofficial" exclusions pointed out by Vulliamy and Webb (2001) is that schools wishing to preserve their position in public accountability systems persuade families to move their child to another school and thus avoid a possible formal exclusion. Then as now this can result in unpopular schools being faced with a high level of demand to make provision available for young people who have become unacceptable in other settings. Also, the Vulliamy and Webb (2001) and Local Government Association (2020) have argued that there is a pressing need for research that provides insight into the relationship between fixed-term and permanent exclusions over time. Whether exclusion is official in that it is recorded and published in national statistics, or it is unofficial, unlawful or not noticed, it can result in a young person missing out on schooling. As Barber (1997) identified in another context, the image that emerges is one where "missing" includes the disappeared who remove themselves from education; the disaffected who for lack of positive educational progression easily move into being amongst the disappeared; and those who are dispossessed because the system has not kept them on its horizon (Barber, 1997, pp. 426–429).

The number of permanent school exclusions (PEX) have risen sharply in England since 2014 prior to the COVID-19 pandemic in stark contrast to the other United Kingdom jurisdictions which under devolution have separate education systems (Cole et al., 2019). The formal data reveals that the likelihood of being excluded is associated with unmet special educational need (SEN) or disability (UNESCO, 2018); as well as psychosocial and mental health difficulties; being of Black-Caribbean heritage; from a low socio-economic background;

and being male (Department for Education [DFE], 2020; Strand and Fletcher, 2014). There are no reliable data on those who go missing from education or those subjected to various forms of exclusion within a school or are illegally excluded (Ofsted, 2013; Gazeley et al., 2015; Power and Taylor, 2020). In addition to high levels of PEX and fixed period exclusions (FEX), there has of late been considerable concerns expressed about "hidden" forms of exclusion, including "managed moves," "off-rolling," and "internal" exclusions (IPPR, 2017; Education Select Committee, 2018; Ofsted, 2018).

While some of the causes of school exclusion are well-documented, very little is known about the system-level factors that lie behind the numbers overall. The influence of cultural and historical influences is witnessed in wide variations in official levels of exclusion reported (pre-COVID) across the United Kingdom. Example in 2018–2019 7,894 PEX in England (10 per 10,000), 165 PEX in Wales (4 per 10,000), 33 PEX in Northern Ireland (NI) (1 per 10,000), and only three in Scotland (0 per 10,000).

There are four areas in relation to exclusion which have raised a number of concerns in recent years: Persistent absence, Elective Home Education (EHE), young people who miss out on education in a variety of ways that remain almost invisible, and illegal schools. All four are characterized by a weakness in the evidence that is available for public scrutiny and to policy makers.

Persistent Absence

While there will be a variety of reasons for school non-attendance, this group will include self excluders, including young people who are experiencing difficulties with school work, relationships with others, who are bored, bullied, or have mental health difficulties (Reid, 2012; Thompson et al., 2022). Non-attendance can lead to a self perpetuating cycle as the child falls behind, and relationships with peers weaken. It is perhaps unsurprising that the rate in England is highest amongst young people with SEND (Ofsted, 2021) where over a quarter of children with an Education Health and Care plan fall into the category of persistent absentee children and almost 1 in 5 children who are categorized as SEND support (Ofsted, 2021). This compares to mainstream rates of 11%.

These rates need to be set within policy decisions that frame the measurement. Persistent absence has been a particular concern in recent years in England, with official definitions of measurement changing in 2009/2010 from those who miss 20% or more of school sessions, to a threshold of 15% or more to "ensure that schools take action sooner," and meaning that some 4,30,000 children now met the bar an increase of 2,46,000 young people (Department for Education [DFE], 2011). Measurement also shifted from 5 half terms to six from 2012/13. Subsequently, the bar was further raised in 2015/16 to those who are absent 10% or more of the time (Department for Education [DFE], 2019). Thus, while persistent absence has been a particular concern, the methodology has been changed to emphasize this.

There are important limitations to the data, and therefore what it can tell us about access to education. Data is based on presence at twice daily registrations, therefore internal absences, and those who disappear off the premises after registration are not recorded, nor are children who miss particular lessons. Special school data are only collected annually, a highly relevant anomaly during the COVID pandemic. Data are only collected for schools that are registered.

As with much official data, it requires a detailed interrogation of the dataset to go beyond headline accounts. For example, while there is reported data for increased persistent absence and SEND, intersectional data requires access to the whole dataset, and is not readily available for public scrutiny. This is well illustrated by the research of Moyse (2021) who, with data provided through a freedom of information request, reveals increasing numbers of girls on the autistic spectrum identified as persistent absentees at state funded secondary schools in England. The girls also now form a much larger proportion of absent autistic pupils. Being able to examine the evidence in detail enables further research to look more closely at the experiences of particular groups who are in effect self-excluding from school. With respect to this identified group further research revealed how persistent absence was associated with unmet needs and a failure to provide appropriate support. In particular their withdrawal reflected their experience of a school environment and ethos that was damaging their mental health, rather than due to a lack of motivation or interest in learning.

There has been a tendency to pathologize the individuals who are persistent absentees (and their families) with policies of parental prosecution (Department for Education [DFE], 2022) that sit uncomfortably alongside failures to find suitable school placements or provision to meet their need (Ofsted, 2020). Official advice focuses on parental responsibilities in finding "ways to improve your child's attendance" rather than looking at school based factors, including the impact of cultural aspects of the school, school climate and categorization, feeling safe, relationships with staff and peers (Thompson et al., 2022). In the face of prosecution for their child's persistent absence, parents may opt for elective home education.

Elective Home Education

The Association of Directors of Children's Services (ADCS, 2021) survey reported in 2021 that 94,258 young people were thought to be supposedly receiving Elective Home Education (EHE) in 2020/21 across 124 Local Authorities (LA) in England responding to their nationwide survey. They estimated that 1,15,542 children and young people were being home educated across all 152 LAs in England during the previous academic year. This provides evidence of a rise of about 34% from the 2019/20 academic year (ADCS, 2021). Somewhat worryingly they stated that LAs are very concerned about the lack of power they have to ensure that all EHE children are safeguarded and receiving a suitable and meaningful education. They also reported a number of significant concerns including: the absence of reliable comprehensive data on the children concerned; the safety and appropriateness of the schooling environment, safeguarding children against harm or exploitation; the impact of EHE on obtaining qualifications; and the credentials and qualifications of some of the tutors being employed. It was also suggested that given that only 7% of local authorities are at

all certain that they have knowledge of all the EHE children and that the data available underestimates the true extent of the phenomenon (The Office of the Children's Commissioner [OCC], 2019).

Whilst the Office of the Children's Commissioner claimed that the evidence suggests a significant increase in children being home educated they cautioned that there cannot be complete certainty on the numbers due to the lack of any formal registration. This absence of regulation marks England as an outlier in comparison with other European states in which EHE is legal (The Office of the Children's Commissioner [OCC], 2019). Seabrook et al. (2021) report from one of the Athenaeum Club's Topical Discussion Groups which identified a pressing need for a robust supportive and protective framework for Elective Home Education. Overall this widespread activity proceeds in the absence of evidence of relevance and its consequences for young people. There are signs that attempts will be made to rectify this situation (Foster, 2019). Savage (2021) reports that the chief inspector of Ofsted (the government education inspection body in England), "Amanda Spielman, has warned that ministers have "no handle" on who the missing children are or where they are. She said school absences had led to significant fall in the numbers of referrals to social care, potentially putting more children at risk of abuse. It was further stated that Spielman has called for an official register of children who are not attending school (Savage, 2021)."

Illegal Schools

Some parents have made claims that they are home educating their children, when in fact they are sending them to unregistered and illegal schools (or "tuition centers"). In these situations they may be offered a poor education with worrying standards of welfare and hygiene. Illegal schools operate beyond the gaze of the legal frameworks that have been put in place to safeguard children. This settings lack definition or even identification and function in a way that is not open to any form of inspection. Since setting up a specialist taskforce in 2016, Ofsted has identified 439 schools which are possibly operating illegally (The Office of the Children's Commissioner [OCC], 2019).

Missing Children

Nationally, there is a distinct lack of any detailed, reliable data concerning the extent to which children are missing out on extended periods of formal, full-time education (Parish et al., 2020). Estimates vary considerably from Feuchtwang (2018) who suggests that nearly 50,000 children in England have been missing from education to Parish et al. (2020) who state that their best estimate developed in their Local Government Association study is that in 2018/19, more than a quarter of a million children in England may have missed out on education. This equates to around 2% of the school age population. There is also considerable variation in the operational definition of missing education. This, in turn, conditions the nature and extent of the data that are gathered.

The statutory guidance *Children Missing Education* (Department for Education [DFE], 2016) sets out the key principles to enable local authorities in England to implement their legal duty under section 436A of the Education Act 1996 to make arrangements to identify, as far as it is possible to do so, children missing education. It states:

"All children, regardless of their circumstances, are entitled to an efficient, full time education which is suitable to their age, ability, aptitude and any special educational needs they may have. Children missing education are children of compulsory school age who are not registered pupils at a school and are not receiving suitable education otherwise than at a school (Department for Education [DFE], 2016, p. 5)."

Interestingly, ofsted uses a broader definition of pupils missing from education in their inspections, which includes those on a school roll but on unsuitable part-time timetables or unlawfully excluded (Ofsted, 2016).

Data on children missing education are not collected in a systematic way at national level. This means that there are no reliable figures for the whole of England (National Children's Bureau, 2014). This is a cause for concern given that careers, schools, and local authorities all have responsibilities in preventing children missing education, which is set out in national guidance and procedures (Department for Education [DFE], 2016).

In their report for the Local Government Association Parish et al. (2020) employ the following definition: "any child of statutory school age who is missing out on a formal, full-time education." By "formal," they mean an education that is well-structured, contains significant taught input, pursues learning goals that are appropriate to a child or young person's age and ability and which supports them to access their next stage in education, learning or employment. By full-time they mean an education for at least 18 h per week. They conclude that:

> "Children missing education can be found in a variety of both formal and informal education settings, they can be found at home receiving different forms of educational input or none at all, they can be found in employment and they can be simply unknown to those providing services in the community. This complexity helps to explain why the numbers of children missing out on their entitlement to education might be routinely underestimated and why it has historically been a challenge to construct legislation and guidance that ensures that no children miss out on the education which is their right, by law (Parish et al., 2020, p. 18)."

The differences in the numbers arrived at by their three approaches to estimation attest to the lack of precision in definition a general weakness of the evidence on prevalence (see **Figure 1**).

Done and Knowler (2020a,b) have recently discussed "offrolling"- a practice which involves young people being removed from schools in ways which are variously referred to as unofficial, unlawful, or illegal and which appears to be prevalent in both England and Australia (Done et al., 2021). The evidence on offrolling is not strong. Ofsted (2019b) raised concerns about

LGA Children missing education ISOS PARTNERSHIP NATALIE PARISH, BEN BRYANT, BETH SWORDS 2020	How many children are not attending their school full-time	How many children in EHE are not receiving formal full-time education	How many children in AP are not receiving formal full time education	Impact on total number of children missing formal full time education
Minimum	60,000 Half a year or more	16,000 50% of uplift in EHE numbers since 2014-15	2,000 5% of those in AP	208000
Medium – LGA methodology	124,000 A term or more	24,000 75% of uplift	4,000 10% of those in AP	282000
Maximum	965,000	32,000	11,000	**1,138,000**

FIGURE 1 | LGA estimates of children missing from education.

5,800 pupils with special educational needs and disabilities (SEND) who they found had left school between Years 10 and 11 (January 2017 to January 2018), however, they state that a significant proportion "may have been off rolled" (2019b, p. 53). When all Year 10 pupils were considered, it was found that 19,000 had left school during this period and 9,700 of these remained unaccounted for (2019b, p. 50). The report speculates that schools may have been "gaming" the accountability systems (Ofsted, 2019a: 50).

It is almost unsurprising to note that the Education Policy Institute [EPI], 2019 demonstrated that the pupils most likely to be off rolled were: those who had previously undergone an official permanent exclusion (1 in 3) or fixed term exclusion (1 in 5); pupils in contact with the social care system (1 in 3); those with a high number of authorized absences (approximately 2 in 5 of whom in the 2017 cohort had experienced at least one unexplained exit); pupils eligible for free school meals (1 in 7); those from black ethnic backgrounds (1 in 8); and those in the lowest prior attainment quartile (1 in 8). The disadvantaged and the marginalized were most likely to be further distanced from education through processes which remain invisible.

So what can be said about what counts as evidence as to the scale of the problem of exclusion? If the definition of exclusion is restricted to official permanent exclusion and suspension then the Statistical First Release data released by the DfE provide a strong evidence base, with particular groups over-represented. However, if the definition of exclusion is widened to include the wide range of unofficial practices that lead to young people missing out on education then the evidence base is weak, and its access limits public scrutiny of the intersection between groups of individuals who may share common unfulfilled needs. The true extent of the latter remains uncertain although the evidence that is available suggests that the scale of this problem is worryingly large. In consequence, these limitations impact on the availability of measures to evaluate the effectiveness of strategies to prevent exclusion.

WHAT COUNTS AS EVIDENCE ON THE PREVENTION OF EXCLUSION

What counts as evidence in the prevention of school exclusion is contested. Qualitative research designs are often critiqued on the grounds of narrow contextualization and lack of generalizability. For example, in a DfE commissioned independent literature review produced as part of the evidence base for the United Kingdom government's *Timpson Review of School Exclusions* (Timpson, 2019) the authors note that:

> "Much of the literature focusing on preventative initiatives and approaches is based on qualitative evidence, which is limited in terms of its applicability beyond the circumstances in which the study was carried out and the purposive nature of the sample design. As a consequence, the evidence on the impact of these initiatives is limited (Graham et al., 2019, p. 43)."

In addition to the issue of research design is the question of how we evaluate the impact of an intervention. Valdebenito et al.'s (2018) Campbell Collaboration Systematic Review entitled "*School-Based Interventions for Reducing Disciplinary School Exclusion*" reports only on studies that have used randomized controlled trials (RCTs). RCTs are considered by many to be the best methodological design for isolating confounding factors and producing an accurate measure of intervention effects. In this case the measure of impact is the use of school exclusionary sanctions, as formally reported by the school. Given the earlier discussion about the limitations to the reporting of these data this raises questions about the accuracy and narrowness of the measures. Amongst the boundaries set around the inclusion of studies is the exclusion of special schools and studies where the intervention was specific to special needs. Of the 37 studies in the review, carried out across nine countries, the majority (73%) focused on changing some aspect of the pupils' skills or behavior, example, social skill training, anger management. The

remaining 27% reported intervention changing some aspect of the school or teacher.

The Valdebenito et al. (2018) report evidences a limited number of short term weak effects:

> "The analyses reported in previous chapters suggest that school-based interventions are capable of producing a small and significant (*SMD* = 0.30; 95% CI, 0.20–0.41; $p < 0.001$) drop in exclusion rates. It means that those participating in interventions are less likely to be excluded than those allocated to control/placebo groups. These results are based on measures of impact collected on average, 6 months after treatment. When the impact was tested in the long-term (i.e., 12 or more months after treatment), the effect of interventions was not sustained. In fact, the impact of school-based programmes showed a substantial reduction (50%), and was no longer statistically significant (Valdebenito et al., 2018, p. 84)."

Even then the authors of the report lament the quality of the small number of publications that they drew on in that they are lacking a considerable amount of information for judging the quality of the procedures carried out (Valdebenito et al., 2018).

Goldacre (2013) is one of many advocates of RCT designs as a means of providing "gold standard" evidence about what works in education. This advice drives a lot the activity funded by the Education Endowment Fund (EEF) which seeks to generate new evidence of "what works" to improve teaching and learning. The EEF has been awarded significant and sustained endowment funding by the Department for Education since its foundation in 2011 and it has tended to favor RCTS when funding educational research.

Tensions between advocates of small scale, in depth qualitative research and large scale quantitative experimental designs have been witnessed in what have become almost tribal skirmishes in the battle for evidence.

> "Evidence matters in the ongoing struggle for more equitable and just education. But there is no direct link between "fact" and norm, between science and policy. To address questions of equity requires rich, interpretive, and evolving sciences, not a narrow technical approach that invites capture by particular doctrinal and generic approaches to systems reform, public policy, and institutional governance (Luke et al., 2010, p. xv)."

These debates have taken a slightly different turn in recent years. Cartwright and Hardie (2012) have highlighted some of the common misuses and abuses of RCT methods in social and medical sciences. In particular they suggest that the importance of context is often ignored and this can lead to the simplistic adoption of a "what works" approach to policy making. A central concern in this series of arguments is that RCTs may provide evidence about what worked "there and then" but will not necessarily provide evidence about what will work "here and now." A similar argument is promoted by advocates of realist RCTs. Realist researchers focus not merely on what works, but on what works for whom and under what conditions:

> "Randomized trials of complex public health interventions generally aim to identify what works, accrediting specific intervention "products" as effective. This approach often fails to give sufficient consideration to how intervention components interact with each other and with local context. "Realists" argue that trials misunderstand the scientific method, offer only a "successionist" approach to causation, which brackets out the complexity of social causation, and fail to ask which interventions work, for whom and under what circumstances (Bonell et al., 2012, p. 2299)."

Marchal et al. (2013) question the assumptions made by Bonell et al. that research from a realist paradigm can adapt RCT research designs that come from a mentally positivist position.

These are issues which confront researchers across the social sciences and medicine. Skivington et al. (2021) report on the replacement of the United Kingdom Medical Research Council's widely used guidance for developing and evaluating complex interventions with a new framework, which takes into consideration recent developments in research design and methods and the need to maximize the efficiency, use, and impact of research. Skivington et al. (2021) argue that there is a need to step beyond questions of efficacy and effectiveness by employing a broader range and combination of research perspectives and methods. Among their plea for new forms of questioning are:

> "Will this effective intervention reproduce the effects found in the trial when implemented here? and how are the intervention effects mediated by different settings and contexts? (Skivington et al., 2021, p. 3)"

The mixing of methods and methodologies raises a tension between what is taken as fact and how it is aligned with the meanings associated with a supposed fact and the status accorded to each perspective.

Cowen et al. (2017) make a related point arguing that as 'the same policy or intervention will have different effects in different populations that have different support factors or different distributions of support factors, it matters in new settings which support factors are present and in what proportions (p. 269)." From this perspective one size cannot possibly fit all.

Joyce and Cartwright (2018) suggest the need for a reconsideration of the division of labor between practitioners and researchers in the production of evidence. They acknowledge that practitioners are well positioned to identify support factors or the distribution of support factors. They bring insights into the ways in which interventions worked in particular situations and to identify causal components. They argue that:

> "Although educators within local contexts are in the best epistemic position to secure evidence for some of these premises, researchers can help. However, they further suggest that researchers can consider which aspects of the arrangements in study settings and features of individuals affect the outcome (Joyce and Cartwright, 2018, p. 17)."

Also, they can identify intermediate steps observed during the study that indicate success. Taken together these two perspectives enhance the possibilities for reliable predictions. A primary need

is that researchers "must be explicit in describing the local contexts in which interventions are studied" (Cruz et al., 2021, p. 421). Here lies a major challenge for the development of this field. The move from crude models of context to more sophisticated accounts of the ways in which context is actively made rather than surrounds interventions requires considerable theoretical and methodological development (Cole, 1996). Recourse to developments in the sociology of pedagogy, cultural transmission and cultural historical theory may prove fruitful.

CONCLUSION

An examination of the role of evidence in developing effective inclusion must incorporate evidence on exclusion, a school practice that violates students' fundamental rights and, in turn, impacts negatively on their futures. We draw attention here to the longstanding difficulties of calibrating the extent of exclusionary practices. Absence of data results in a lack of accountability systems that serve to safeguard students. In addition to the formal systems of school suspension and expulsion are a raft of practices that indicate that the scale of exclusion is much larger. These include managed moves, off-rolling, internal exclusions, and children who effectively have part-time provision, either through restricted timetables or being sent home early. Evidence on the scale of these practices can best be described as fragile. Data reviewed here indicates that in England some 2% of the population are missing education, not receiving their education in a registered school. Taking both informal and formal systems together indicates a wide-spread failure of schools to provide for the diversity of students.

The relationship between policy and data collection is further witnessed in responses that target the individual rather than the system and demonstrates the pathologizing of students and their families. The formal collection of data indicate that particular groups of students are disproportionately represented but access to the data set prohibits a full public understanding of the intersection between these groups. This in turn limits our understanding of their experiences in school and the ways in which we can effectively remove barriers to participation. Reviews of large scale studies indicate the restricted impact of interventions that target the individual. We have also shown how constrained are the methods that are used to provide evidence for policy makers on the implementation of interventions. In part this reflects a policy reliance on decontextualized data (such as statistical data and RCTs) or the idea that one size fits all. Decontextualized data can lead to policies that ignore the context. Using flawed formal data to measure impact only serves to further marginalize students. New methodologies are needed that shift the evidence base from an individual to a systemic in context account, that recognizes the role of cultural transmission and cultural historical theory. To close this manuscript we return to the text we referred to at the start.

Given the complexity of both teaching and educational innovation, any neglect of research into the processes of change in naturalistic settings will not only lead to a restricted awareness of a project's impact but also to a failure to understand what certain apparent outcomes actually mean. Vulliamy and Webb (2001) p. 368.

Exclusion from school should be understood as being a multifaceted cultural and historical phenomenon or process and a complex intervention. To reiterate Sen (1992) different individuals will make use of different opportunities in different ways. Evidence on understanding school exclusion, and what might work to prevent exclusion, needs to be framed in equally complex ways that attend to both contextual and societal practice and their cultural historical origins.

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HD produced the first draft which was subsequently developed by JP and IT. All authors contributed to the article and approved the submitted version.

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REFERENCES

ADCS (2021). *Elective Home Education Survey 2021*. London: The Association of Directors of Children's Services Ltd.

Ainscow, M., Dyson, A., and Weiner, S. (2013). *From Exclusion to Inclusion: Ways of Responding in Schools to Students with Special Educational Needs*. England: CfBT Education Trust.

Armstrong, D. (2018). Addressing the wicked problem of behaviour in schools. *Int. J. Inclusive Educ.* 22, 997–1013. doi: 10.1080/13603116.2017.1413732

Bademci, H. Ö, Karadayı, E. F., and Vural, N. B. (2016). Exploring school exclusion through the perspective of child labourers living in Sultanbeyli, on the periphery of Istanbul, Turkey. *Int. J. Educ. Dev.* 50, 51–58. doi: 10.1016/j.ijedudev.2016.06.001

Barber, M. (1997). The learning game: Arguments for an education revolution. *Br. J. Educ. Stud.* 45, 426–429.

Bonell, C., Fletcher, A., Morton, M., Lorenc, T., and Moore, L. (2012). Realist randomised controlled trials: a new approach to evaluating complex public health interventions. *Soc. Sci. Med.* 75, 2299–2306. doi: 10.1016/j.socscimed.2012.08.032

Cartwright, N. (2013). Knowing what we are talking about: why evidence doesn't always travel. *Evidence Policy* 9, 97–112. doi: 10.1332/174426413X662581

Cartwright, N., and Hardie, J. (2012). Evidence-based Policy: A Practical Guide to Doing it Better.Oxford : Oxford University Press doi: 10.1093/acprof:osobl/9780199841608.001.0001

Cole, M. (1996). *Cultural Psychology: A Once and Future Discipline*. Cambridge, Mass: Harvard University Press.

Cole, T., McCluskey, G., Daniels, H., Thompson, I., and Tawell, A. (2019). Factors associated with high and low levels of school exclusions: comparing the English and wider UK experience. *Emotion. .Behav. Difficul.* 24, 374–390. doi: 10.1080/13632752.2019.1628340

Cowen, N., Virk, B., Mascarenhas-Keyes, S., and Cartwright, N. (2017). Randomized controlled trials: How can we know "what works"? *Crit. Rev.* 29, 265–292. doi: 10.1080/08913811.2017.1395223

Cruz, R. A., Firestone, A. R., and Rodl, J. E. (2021). Disproportionality reduction in exclusionary school discipline: A best-evidence synthesis. *Rev. Educ. Res.* 91, 397–431. doi: 10.3102/0034654321995255

Daniels, H., and Cole, T. (2010). Exclusion from school: short-term setback or a long term of difficulties?'. *Eur. J. Special Needs Educ.* 25, 115–130. doi: 10.1080/08856251003658652

Department for Education [DFE] (2011). *Pupil Absence in Schools in England: 2009 to 2010*. National Tables. London: DfE.

Department for Education [DFE] (2016). *Children Missing Education: Statutory Guidance for Local Authorities*. London: DfE.

Department for Education [DFE] (2019). *A Guide to Absence Statistics March 2019*. London: DfE.

Department for Education [DFE] (2020). *Permanent and Fixed Period Exclusions in England: 2018 to 2019*. London: DfE.

Department for Education [DFE] (2022). *School Attendance and Absence*. https://www.gov.uk/school-attendance-absence/legal-action-to-enforce-school-attendance (accessed May 15, 2022).

Done, E. J., and Knowler, H. (2020a). A tension between rationalities: 'off-rolling' as gaming and the implications for head teachers and the inclusion agenda. *Educ. Rev.*[preptint] doi: 10.1080/00131911.2020.1806785

Done, E. J., and Knowler, H. (2020b). Painful invisibilities: roll management or 'off-rolling' and professional identity. *Br. Educ. Res. J.* 46, 516–531. doi: 10.1002/berj.3591

Done, E. J., Knowler, H., and Armstrong, D. (2021). 'Grey' exclusions matter: mapping illegal exclusionary practices and the implications for children with disabilities in England and Australia. *J. Res. Special Educ. Needs* 21, 36–44. doi: 10.1111/1471-3802.12539

Education Select Committee (2018). *Forgotten Children: alternative Provision and the Scandal of Ever Increasing Exclusions. Fifth Report of Session 2017–19*. London: HMSO.

Education Policy Institute [EPI] (2019). *Unexplained Pupil Exits from Schools: A Growing Problem?*. London:Education Policy Institute

Feuchtwang, A. (2018). Nearly 50 000 children have been missing from education. *British Journal of School Nursing* 13, 36–37. doi: 10.12968/bjsn.2018.13.1.36

Florian, L. (2014). What counts as evidence of inclusive education? *Eur. J. Special Needs Educ.* 29, 286–294. doi: 10.1080/08856257.2014.933551

Foster, D. (2019). House of Commons Library Briefing Paper: Number. London: House of Commons Library.

Gazeley, L., Marrable, T., Brown, C., and Boddy, J. (2015). Contextualising inequalities in rates of school exclusion in English schools: beneath the 'tip of the ice-berg'. *Br. J. Educ. Stud.* 63, 487–504. doi: 10.1080/00071005.2015.1070790

Goldacre, B. (2013). *Building Evidence into Education*. London: DfE.

Graham, B., White, C., Edwards, A., Potter, S., and Street, C. (2019). *School Exclusion: A Literature Review on the Continued Disproportionate Exclusion of Certain Children*. London: DfE.

IPPR (2017). *Making the Difference: Breaking the link between School Exclusion and Social Exclusion*. London: IPPR.

Joyce, K. E., and Cartwright, N. (2018). Meeting our standards for educational justice: Doing our best with the evidence. *Theor. Res. Educ.* 16, 3–22. doi: 10.1177/1477878518756565

Kauffman, J. M., and Hornby, G. (2020). Inclusive vision versus special education reality. *Educ. Sci.* 10:258. doi: 10.3390/educsci10090258

Leung, M. W., Waters, J. L., and Ki, Y. (2021). Schools as spaces for in/exclusion of young Mainland Chinese students and families in Hong Kong. *Comp. Migration Stud.* 9, 58. doi: 10.1186/s40878-021-00269-7

Local Government Association (2020). *We Can Work it out: In-depth Research into Development and Policy Issues for Local Strategic Partnerships*. London: Local Government Association.

Luke, A., Green, J., and Kelly, G. J. (2010). What counts as evidence and equity? *Rev. Res. Educ* 34, 7–16. doi: 10.3102/0091732X09359038

Marchal, B., Westhorp, G., Wong, G., Van Belle, S., Greenhalgh, T., et al. (2013). Realist RCTs of complex interventions: an oxymoron. *Soc. Sci. Med.* 94, 124–128. doi: 10.1016/j.socscimed.2013.06.025

Moll, L. C. (2000). "Inspired by Vygotsky: Ethnographic Experiments in Education," in *Vygotskian Perspectives on Literacy Research: constructing Meaning through Collaborative Inquiry*, eds C. D. Lee and P. Smagorinsky (Cambridge: Cambridge University Press), 256–268.

Moyse, R. (2021). *Missing: The Autistic Girls Absent from Mainstream Secondary Schools*.Ph.D Thesis. England:University of Reading, Institute of Education.

Muderedzi, J., and Ingstad, B. (2011). "Disability and Social Suffering in Zimbabwe," in *Disability and Poverty: a Global Challenge*, eds A. H. Eide and B. Ingstad (Bristol: Policy Press). doi: 10.2307/j.ctt9qgths.14

Munn, P., Lloyd, G., and Cullen, M. (2000). *Alternatives to Exclusion from School*. London: Paul Chapman. doi: 10.4135/9781446219478

National Children's Bureau (2014). *Not Present, What Future? Children Missing Education in England*. London: NCB.

The Office of the Children's Commissioner [OCC] (2019). *Skipping School: invisible Children How Children Disappear from England's Schools*. London: OCC.

O'Donovan, R., Berman, N., and Wierenga, A. (2015). How schools can move beyond exclusion. *Int. J. Inclusive Educ.* 19, 645–658. doi: 10.1080/13603116.2014.961686

Ofsted (2013). *Pupils Missing out on Education*. London: Ofsted.

Ofsted (2016). *Inspecting Safeguarding in Early Years, Education and Skills Settings. Guidance for Inspectors Undertaking Inspection Under the Common Inspection Framework*. Manchester: Ofsted.

Ofsted (2018). *Managing Behaviour in Schools – Briefing Note*. London: Ofsted.

Ofsted (2019a). *The Annual Report of Her Majesty's Chief Inspector of Education, Children's Services and Skills 2017/2018*.London: Ofsted

Ofsted (2019b). *Off-rolling: An Update on Recent Analysis*. London: Ofsted.

Ofsted (2020). *Ofsted Annual Report 2018-19*. London: Ofsted

Ofsted (2021). *SEND: Old Issues, New Issues, Next Steps*. London: Ofsted.

Osler, A., Watling, R., and Busher, H. (2001). *Reasons for Exclusion from School*.(Research Report, No. 244) London: DfEE. .

Parish, N., Bryant, B., and Swords, B. (2020). *Children Missing Education*. London: Local Government Association.

Power, S., and Taylor, C. (2020). Not in the classroom, but still on the register: Hidden forms of school exclusion. *Int. J. Inclusive Educ.* 24, 867–881. doi: 10.1080/13603116.2018.1492644

Power, S. A. R., and Taylor, C. M. (2013). Social justice and education in the public and private spheres. *Oxford Rev.Educ.* 39, 464–479. doi: 10.1080/03054985.2013.821854

Reid, K. (2012). The strategic management of truancy and school absenteeism: finding solutions from a national perspective. *Educ. Rev.* 64, 211–222. doi: 10.1080/00131911.2011.598918

Riddell, S., and McCluskey, G. (2012). "Policy and provision for children with social, emotional and behavioural difficulties in Scotland: Intersections of gender and deprivation," in *The Routledge International Companion to Emotional and Behavioural Difficulties*, eds T. Cole, H. Daniels, and J. Visser (London: Routledge), 57–67.

Savage, M. (2021). *Hunt launched to find 'ghost children' missing from schools in England*.https://www.theguardian.com/society/2021/dec/12/hunt-launched-to-find-ghost-children-missing-from-schools-in-england (accessed May 15, 2022).

Scottish Government (2017). *Included, Engaged and Involved Part 2: A Positive Approach to Preventing and Managing School Exclusions*. Edinburgh: Scottish government.

Seabrook, R., Ghosh, H., Kohli, P., and Unwin, T. (2021). *Elective Home Education: the Need For A Robust Supportive And Protective Framework*. London: Athenaeum Club's Topical Discussion Groups.

Sen, A. (1992). *Poverty Re-examined*. Cambridge, MA: Harvard University Press.

Skivington, K., Matthews, L., Simpson, S. A., Craig, P., Baird, J., Blazeby, J. M., et al. (2021). A new framework for developing and evaluating complex interventions: update of Medical Research Council guidance. *BMJ* 374:n2061. doi: 10.1136/bmj.n2061

Slee, R. (2019). Belonging in an age of exclusion. *Int. J. Inclusive Educ.* 23, 909–922. doi: 10.1080/13603116.2019.1602366

Strand, S., and Fletcher, J. (2014). *A Quantitative Longitudinal Analysis of Exclusions*. Oxford: University of Oxford.

Thompson, I. (2017). *Tackling Social Disadvantage through Teacher Education*. St Albans: Critical Publishing.

Thompson, I., Tawell, A., and Daniels, D. (2022). "Unwillingly to school. School influences on attendance and special educational needs," in *Mental Health and*

Attendance at School, eds T. Ford, K. Finning, and D. A. Moore (Cambridge: Cambridge University Press), 130–144. doi: 10.1017/9781911623151.008

Timpson, E. (2019). *Timpson Review of School Exclusion*. London: Department for Education.

UNESCO (2018). *Inclusion and Education. Think piece prepared for the 2020 Global Education Monitoring Report prepared by Slee, R*. Paris: UNESCO.

UNESCO (2020). *Inclusion and Education*. Paris: UNESCO.

Valdebenito, S., Eisner, M., Farrington, D. P., Ttofi, M. M., and Sutherland, A. (2018). School-based interventions for reducing disciplinary school exclusion: a systematic review. *Campbell Syst. Rev.* 14:216. doi: 10.4073/csr.2018.1

Vulliamy, G., and Webb, W. (2001). The social construction of school exclusion rates: implications for evaluation methodology. *Educ. Stud.* 27:358. doi: 10.1080/03055690120076727

Zancajo, A. (2019). Education markets and schools' mechanisms of exclusion: The case of Chile. *Educ. Policy Anal. Arch.* 27, 1–34. doi: 10.14507/epaa.27.4318

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Examining Parental Perception of Inclusive Education Climate

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Parental perspectives about the inclusion of their child with a disability has received limited attention in the literature. Considering parental voice plays an important role in determining the quality of inclusive education, the lack of reliable and valid tools to investigate parental experiences has significantly limited research in this area. One of the key objectives of this study was to build the evidence base in the field by testing the psychometric properties of the newly developed Parental Perception of Inclusion Climate Scale, using a systematic approach drawing on a review of available research in the field. The scale incorporates items that address parental perspectives regarding six key aspects of inclusion for their child including presence, participation, acceptance, achievement, happiness and belonging. Participants were recruited through social media, and data from 190 parents of children with additional learning needs attending a range of school settings were collected. Results suggested a three-factor structure, with strong internal consistency for the scale. These factors were: Teacher and School Support; Student Engagement; and Friendships. The scale showed that parents are generally moderately satisfied with their child's inclusion in school overall. A series of independent sample *t*-tests and one-way ANOVAs revealed significant differences in parental perspectives of inclusion as measured by the scale according to school sector, disability type, and parent gender. Parents whose children attend government schools reported less satisfaction with their child's inclusion at school and also with the support provided by teachers and schools more broadly as measured by the Teacher and School Support subscale, as compared to parents of children who attend independent schools. Results also suggested that parents of children with a social emotional disability reported less satisfaction with their child's engagement in school as measured by the Student Engagement subscale as compared to parents of children without a social emotional disability. Finally, fathers reported higher levels of satisfaction with their child's engagement in school as measured by the Student Engagement subscale and also higher levels of satisfaction with their peer relationships as measured by the Friendships subscale than mothers. This study provides a tool that researchers, school educators, and policy makers could use to collect evidence about the efficacy of inclusive practices for students with a disability or additional support needs. The scale could provide educators and researchers with a valuable tool to guide evidence-based practice and theory in inclusive education.

Keywords: inclusive education, parental perspectives, teacher practice, school support, evidence-based practice

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INTRODUCTION

In many countries, the right to inclusive education for all learners is enshrined in policy and legislation, with a growing number of students around the world participating in inclusive schooling (Round et al., 2016). In Australia, the Nationally Consistent Collection of Data (NCCD) initiative was introduced to enable the consistent collection of data regarding students with a disability across all sectors and jurisdictions to support schools and education authorities to better understand the needs of students with a disability and improve access to inclusive education for all students (Commonwealth of Australia, 2021). Despite these important developments, there continues to be a lack of consensus regarding the definition of inclusive education, which impacts on the capacity of the field to advance research and practice (e.g., Göransson and Nilholm, 2014). Narrower definitions of inclusion tend to focus on the inclusion of students with additional needs, whereas broader definitions expand this to the inclusion of all students. For the purposes of this paper, inclusion refers to the definition outlined in The United Nations Convention of the Rights of Persons with Disabilities (United Nations, 2006) such that all students, regardless of background, have the right to mainstream schooling and the support required to ensure they experience optimal wellbeing and opportunities for learning, and is consistent with the core features of inclusive education outlined in General Comment No. 4, Article 24: Right to Inclusive Education (UN Committee on the Rights of Persons with Disabilities [CRPD], 2016). These include a whole system and educational approach to inclusive education, a whole person approach to ensure the needs of all learners (including those with a disability) are met, supported teachers and learning friendly environments, valuing diversity, effective transitions, the recognition of partnerships and the ongoing monitoring and evaluation of inclusive practices. Finally, consistent with the stance outlined by Merrigan and Senior (2021) and as reflected in UNESCO's Policy Guidelines on Inclusive Education (United Nations Educational, Scientific and Cultural Organisation [UNESCO], 2009), we have adopted a definition of inclusive education which focuses on strengthening the capacity of the entire education system (including special schools) to reach out to all learners.

Research has demonstrated a range of benefits associated with effective inclusive education for students with and without additional needs (Jordan et al., 2009; Ruijs and Peetsma, 2009; Hehir et al., 2016). Benefits for students with additional learning needs include improved social and educational outcomes as well as greater post-school opportunities (Hunt et al., 1994; Duhaney and Salend, 2000; Starr and Foy, 2012; Dessemontet and Bless, 2013; Ryndak et al., 2013). The literature also describes a range of benefits associated with inclusive education for students without additional learning needs including improved academic outcomes and greater acceptance of diversity (Ruijs and Peetsma, 2009; Dessemontet and Bless, 2013; Hehir et al., 2016).

Over recent years, researchers have turned their attention to understanding the factors that support effective inclusive education in order to achieve optimal outcomes for all learners. The literature describes a range of factors as being important such as teacher and school leader attitudes toward inclusion, school culture and policies, peer relationships and support, and teacher practices including differentiation, personalization and the establishment of positive and supportive relationships with and between students (e.g., Bossaert et al., 2013; De Vroey et al., 2016; Schwab et al., 2018). Considered collectively, these concepts and practices have been described by some researchers as representing a school's 'inclusion climate', a term adapted from the more commonly used concept of 'school climate' (Schwab et al., 2018). School climate has been broadly defined in the literature as the teaching practices, organizational structures, culture, values, attitudes and beliefs, and relationships between students, teachers, leaders and the broader school community that contribute toward a student's experience of school (Mitchell et al., 2010).

Parents' attitudes toward inclusion and their involvement in school have also been demonstrated as playing an important role in contributing toward effective inclusive education (Salend, 1998; De Boer et al., 2010; Wilhelmsen et al., 2021). Some of the ways in which parents contribute toward inclusion in schools are:

- through advocating for the rights of their child to participate and be supported according to their needs (Carter et al., 2012; Wilhelmsen and Sørensen, 2019),
- by supporting their child's engagement in school (Hattie, 2009; De Boer et al., 2010),
- by sharing information about their child and collaborating with teachers and school staff (Ashman, 2015; Turnbull et al., 2015), and,
- through their capacity to provide feedback to schools on the acceptability of inclusive policies and practices and the extent to which they perceive them to be meeting their child's needs (Giangreco et al., 1993; Ryndak et al., 1995).

Despite the importance of parental involvement in contributing toward effective inclusive education and the increasing emphasis by education systems more broadly on the role of the home-school partnership in achieving optimal outcomes for students (Fan and Chen, 2001; Hattie, 2009), relatively few studies have investigated parental attitudes toward and satisfaction with inclusive education, specifically in relation to their child. Duhaney and Salend (2000) conducted a review of the literature regarding the experiences of parents of children with and without disabilities concerning inclusive educational programs. Seventeen studies were identified for inclusion in their review, with two of these involving mothers of children with disabilities and 15 studies eliciting the perspectives of parents of children with and without disabilities. Results of this review suggested that the majority of parents of children with disabilities support inclusion and have generally positive attitudes toward inclusive education, including positive beliefs regarding the importance of inclusion in supporting their child's learning and their social and emotional development. Despite these positive beliefs, parents across studies included in this review expressed concerns regarding the capacity of schools to adequately meet their child's needs, including concerns regarding

the provision of personalized and differentiated support, as well as concerns regarding their child's acceptance by peers. A more recent review conducted by De Boer et al. (2010) yielded similar findings. These authors conducted a review of 10 studies published since 1998 regarding parental attitudes toward inclusive education. They found that the majority of parents surveyed across studies have positive attitudes toward inclusion, however they expressed concerns regarding schools' capacity to meet their child's needs, including a lack of individualized instruction and limited resources.

A recent mixed methods study conducted by Stevens and Wurf (2020) investigated the perceptions of 44 Australian parents of children with and without disabilities. Results of this study suggested that the majority of parents believed that inclusive education has benefits for their child, with parents of children with disabilities more likely than parents of children without disabilities to strongly agree that children have the right to inclusive education. Consistent with previous research, the majority of parents believed that teachers were not equipped with the skills or experience to meet the needs of students with disabilities in inclusive classrooms and that resource allocation in schools is not always well targeted or inefficient. Another recent study by Paseka and Schwab (2020) involving a representative survey of 2000 parents in Germany, found that although parental attitudes toward students with a physical disability or learning disability were generally positive, attitudes toward students with behavioral or cognitive disabilities tended to be more neutral. Parents whose children attend an inclusive class reported more inclusive practices than parents of children who attend a class in which there are no children with additional learning needs. There were no significant differences in parental perceptions regarding the allocation of resources according to classroom type (inclusive or regular classroom).

De Boer et al. (2010) review identified the factors that are related to parental attitudes toward inclusion. They reported a range of variables that have been investigated in previous studies including parental age, gender, family SES and child disability type and severity. According to their review, no differences in attitudes have been identified in previous studies according to parental age (Balboni and Pedrabissi, 2000; Kalyva et al., 2007), however, results for parental gender have been mixed. Some studies have identified mothers as reporting more positive attitudes than fathers (Balboni and Pedrabissi, 2000), while others have found fathers report more positive attitudes than mothers (Kalyva et al., 2007).

Parents from higher SES backgrounds and with higher levels of education have been identified as reporting more positive attitudes toward inclusion (Stoiber et al., 1998; Balboni and Pedrabissi, 2000; Leyser and Kirk, 2004) and previous experience of inclusive education has also been identified as a predictor of more positive attitudes (Balboni and Pedrabissi, 2000; Paseka and Schwab, 2020). Finally, differences in parental attitudes toward inclusion have been identified according to child disability type and severity, with less positive parental attitudes reported for children with social-emotional disabilities and cognitive disabilities (Rafferty et al., 2001) and for children with more severe levels of disability (Leyser and Kirk, 2004).

Although previous research in the field has yielded important findings regarding parental attitudes and their perspectives on their child's experience of inclusion at school, the lack of consistency in measurement across studies has been a substantial limitation in this area of research. Having access to a reliable and valid tool to elicit parental perceptions regarding the inclusion climate of their child's school would provide researchers, school educators and policy makers the opportunity to collect evidence about the efficacy of inclusive practices for students with additional support needs as well as guiding practice and theory in inclusive education. The first aim of the current study was therefore to test the psychometric properties of the newly developed Parental Perception of Inclusion Climate Scale (PPICS). The scale was developed using a systematic approach drawing on a review of available research in the field and incorporates items that address parental perspectives regarding six key aspects of inclusion for their child including presence, participation, acceptance, achievement (Ainscow and Miles, 2008), happiness and belonging (Voltz et al., 2001). The scale includes similar items to the existing Inclusion Climate Scale (Schwab et al., 2018), a validated tool developed to measure students' perspectives on the inclusion climate of their school. The second aim of the study was to investigate the demographic characteristics of parents that might influence perceptions of inclusion as measured by the PPICS. We believe a scale of this nature could be helpful for schools to provide evidence of how inclusive they are not only for students who may have additional needs but for all students.

MATERIALS AND METHODS

Procedure

Ethical approval for the conduct of the project was granted from Monash University's Human Research Ethics Committee (Project ID: 29469). Prior to commencing the project, the survey was pilot tested with a small group of parents (N = 10) to test the acceptability and social validity of survey items. Minor changes to the wording of some items (e.g., alternating use of he/she throughout the survey) were made on the basis of feedback received from parents as part of the pilot testing phase. The survey was distributed in the researchers' networks, via a series of social media posts and advertisements (i.e., Twitter, Facebook, LinkedIn, and Instagram) and by sharing with parent and disability associations, who distributed the survey with their members on behalf of the research team. The online survey included an explanatory statement describing what was involved in taking part in the study for parents. Participants provided consent by selecting a button prior to proceeding to the survey. Data were collected from August 2021 to November 2021.

Participants

Participants included 190 parents of children with additional learning needs. As indicated in **Table 1**, parents included both mothers (n = 178; 95.19%) and fathers (n = 9; 4.81%), with an average parental age of 44.16 years (SD = 8.00). Most participants reported living in Australia (n = 178; 95.70%), with

TABLE 1 | Demographic characteristics of participants.

	n	%	*N*
Parent age	*M* = 44.16 years; *SD* = 8.00		
Child age	*M* = 11.72 years; *SD* = 6.23		
Parent gender			187
Female	178	95.19%	
Male	9	4.81%	
Non-binary/gender diverse	0	0	
Child gender			186
Female	60	32.26%	
Male	121	65.05%	
Non-binary/gender diverse	5	2.69%	
Participant location			187
Urban	26	13.90%	
Suburban	108	57.76%	
Regional/rural	53	28.34%	
Child school setting			184
Mainstream primary school	100	54.35%	
Mainstream secondary school	44	23.91%	
Special class in a mainstream school	13	7.07%	
Special school	21	11.41%	
Other	6	3.26%	
Child school sector			184
Government	133	72.28%	
Catholic	26	14.13%	
Independent	25	13.59%	
Child disability*			190
Cognitive disability	105	55.26%	
Physical disability	33	17.37%	
Sensory disability	112	58.95%	
Social emotional disability	109	57.37%	
Other	66	34.74%	
Level of support required to participate in school activities			184
Minimal or no support	11	5.98%	
Some support	40	21.74%	
Moderate level of support	62	33.70%	
Extensive level of support	67	36.41%	
Not sure	4	2.17%	

**Participants could select more than one response option.*

five participants living in Singapore (2.69%) and one (0.54%) each in Indonesia, Nepal, and New Zealand. The majority of participants reported living in suburban areas (n = 108; 57.76%), with 26 (13.90%) participants reporting living in urban areas and 53 (28.34%) participants living in regional/rural areas.

Participants in the study were parents of children with an average age of 11.72 years (SD = 6.23), with 60 females (32.26%), 121 males (65.05%) and five gender diverse young people (2.69%). Over half of parents in the study (n = 100; 54.35%) reported that their child attends a mainstream primary school, with 44 (23.91%) participants reporting that their child attends a mainstream secondary school, 13 (7.07%) attending a special class in a mainstream school and 21 (11.41%) attending a special school setting. The majority of participants reported their child attends a government school (n = 133; 72.28%), with 26 (14.13%) reporting their child attends a Catholic school, and 25 (13.59%) participants reporting their child attends an independent school. Parents reported their children as having a range of disabilities, including cognitive (n = 105; 55.26%), physical (n = 33; 17.37%), sensory (n = 112; 58.95%) and social emotional disabilities (n = 109; 57.37%).

Measures

Data were collected using a two-part online survey.

Part One

The Parental Perception of Inclusion Climate Scale (PPICS) was developed using a systematic approach drawing on a review of available research in the inclusive education field. The scale incorporates 28 items that address parental perspectives regarding six key aspects of inclusion for their child including presence, participation, acceptance, achievement, happiness, and belonging. These six dimensions were informed by a literature review about what makes an inclusive classroom (Schwab et al., 2018). Inclusion is not just the placement of learners with additional needs in regular classrooms, it should also result in these learners participating in a range of school activities that their peers participate in; they should be accepted by their peers and the schooling communities; and, they should achieve across a range of school curricular activities; and finally, they should have a sense of belonging to the school and feel happy to be part of the school community (Schwab et al., 2018). The scale uses a 4-point Likert scale with responses ranging from Not at all True (1) to Completely True (4). We were keen to develop a scale that was informed by the social model of disability rather than using a medical model of disability, to reflect the importance of the social environment in facilitating or creating barriers to inclusion (Kattari et al., 2017) and to identify opportunities for schools to further strengthen inclusive practices on the basis of parental experiences. The items of the scale are phrased so that they could be responded by all parents rather than only by those who have children with additional needs.

Part Two

This part of the survey collected participants' brief demographic information (e.g., age, gender, location) in addition to demographic information in relation to their child (e.g., age, gender, school setting, school sector, disability type, and level of support required to participate in school activities) and two 4-point Likert style questions regarding participants' satisfaction with their child's school in supporting their inclusion in general and during COVID-19 specifically.

Data Analysis

The 28 items of the PPICS were subjected to principal components analysis (PCA) using SPSS Version 27 to investigate the underlying factor structure. PCA was selected as a psychometrically sound and parsimonious approach to reducing the 28 items of the PPICS into a smaller set of linear combinations, drawing on all of the variance in the original variables. PCA has been identified as a preferred approach to Factor Analysis as it can avoid issues associated with factor indeterminacy (Stevens, 2012). Furthermore, given the current study aimed to provide an initial investigation of the PPICS, PCA was identified as the most appropriate analytical approach. Parallel analysis was used to guide comparison of model fit indices, with oblimin rotation used to support the interpretation of identified factors which were assessed for both statistical and conceptual fit. In order to identify any variations in the

factor structure according to school type, the PCA analysis was repeated after removing participants whose children attend a special school setting from the sample.

To determine whether there were any significant differences in parental ratings of inclusion as measured by the PPICS according to a number of demographic characteristics, a series of one-way between groups analysis of variance (ANOVA) and independent samples t-tests were conducted. Prior to conducting the analyses, preliminary tests were undertaken to inspect the normality of distributions of individual items. Skewness and kurtosis values for all items were well within the recommended thresholds of –3 to +3 and –10 to +10 respectively (Griffin and Steinbrecher, 2013) and visual inspection of histograms revealed relatively normal distributions for all items.

RESULTS

The two key purposes of this study were to examine the psychometric properties of the PPICS; and, to investigate the demographic characteristics that might influence parental perceptions. PCA findings and the internal consistency of the PPICS are presented, followed by results of independent samples *t*-tests and one-way between groups ANOVAs regarding differences in parental perspectives of inclusion as measured by the scale according to demographic characteristics.

Psychometric Properties of the Parental Perception of Inclusion Climate Scale

The 28 items of the PPICS were subjected to PCA using SPSS Version 27. Prior to conducting the PCA, the suitability of the data was assessed, which involved consideration of sample size and the strength of the relationship among items. The ratio of participants to items was 6.8:1, meeting the 5:1 ratio recommended by Tabachnick et al. (2007). Furthermore, inspection of the loading of items indicated several high loading marker variables (above 0.8) providing further assurance regarding the suitability of the sample size (Tabachnick et al., 2007; Stevens, 2012). Visual inspection of the correlation matrix revealed the presence of many coefficients of 0.3 and above. The Kaiser–Meyer–Oklin value was 0.96, exceeding the recommended value of 0.6 (Kaiser, 1974). Bartlett's Test of Sphericity (Bartlett, 1954) reached statistical significance supporting the factorability of the correlation matrix.

Principal components analysis revealed the presence of four components with eigenvalues exceeding 1, explaining 54.70, 6.82, 5.69, and 4% of the variance respectively. Results of Parallel Analysis revealed three components with eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix of the same size (28 variables × 190 respondents). On the basis of these findings, three components were retained for further investigation.

The three-component solution explained a total of 67.21% of the variance, with Component 1 contributing 54.70%, Component 2 contributing 6.82%, and Component 3 contributing 6.69%. To support the interpretation of these three components, oblimin rotation was conducted. As summarized in **Table 2**, the rotated solution revealed the presence of a simple structure (Thurstone, 1947), with all three components demonstrating a number of strong loadings and all variables loading substantially on only one component. On the basis of these findings, no items were removed from the scale. Inspection of the items included in each component suggested the following three factors or subscales: Component 1 – Teacher and School Support; Component 2 – Student Engagement; and Component 3 – Friendships. These were named on the basis of the core concepts represented in each component, drawing on past research regarding factors that are associated with effective inclusive education. **Table 3** provides the correlations between the three identified components, which ranged from 0.22 to 0.38.

Results of the PCA and Parallel Analysis for the reduced sample (after removing from the sample participants whose children attend special school settings) were consistent with the three-component solution identified for the full sample. The three-component solution for the reduced sample explained a total of 66.49% of the variance, with Component 1 contributing 53.69%, Component 2 contributing 6.93% and Component 3 contributing 5.87%. Given these findings and for the reasons outlined in the discussion, the full sample was retained for further analysis as reported below.

Scores on the PPICS range from 28 to 112, with higher scores indicative of higher parental ratings of inclusion. The internal consistency of the scale overall and the three identified subscales were investigated by calculating Cronbach alpha coefficients. The PPICS overall had very strong internal consistency, with a Cronbach alpha coefficient of 0.97. The internal consistency for each of the subscales was also strong, with a Cronbach alpha coefficient of 0.97 for the Teacher and School Support subscale, 0.89 for the Student Engagement subscale, and 0.74 for the Friendships subscale.

Differences in Parental Perception of Inclusion According to Demographic Characteristics

Parental ratings on the scale overall suggested that most parents were somewhere in the middle in their level of satisfaction with the inclusion climate at their child's school (M = 68.42; SD = 19.13) considering the value of the total score can range from 28 to 112. Parental ratings of satisfaction with the support provided to their children by teachers and the school were also moderate as measured by the Teacher and School Support subscale (M = 50.27; SD = 15.18), given responses on this subscale can range between 20 and 80. Parental ratings of satisfaction with their child's engagement and enjoyment of school were also in the mid-range as measured by the Student Engagement subscale (M = 9.12; SD = 3.14), as were parental ratings of satisfaction with their child's peer relationships and support as measured by the Friendships subscale (M = 9.04; SD = 2.76), given both of these subscales have a range of responses between 4 and 16.

To determine whether there were any significant differences in parental ratings of inclusion climate as measured by the PPICS according to a number of demographic characteristics,

TABLE 2 | Pattern and structure matrix for PCA with oblimin rotation of three factor solution of the parental perception of inclusion climate scale (PPICS).

Item	Pattern coefficients			Structure coefficients			Communalities
	Component 1	Component 2	Component 3	Component 1	Component 2	Component 3	
(28) My child's teachers are proactive in addressing any concerns that I may have about my child.	**0.90**	–0.06	–0.050	**0.86**	0.21	0.28	0.75
(22) Staff at my child's school treat all students with respect.	**0.90**	–0.13	0.04	**0.87**	0.16	0.35	0.77
(16) Teachers and other staff in my child's school are caring and compassionate toward all students.	**0.89**	–0.03	0.02	**0.89**	0.25	0.35	0.79
(8) My child's teachers are interested in teaching students who face difficulties at school.	**0.87**	0.05	–0.04	**0.87**	0.31	0.31	0.77
(26) Teachers are respectful in the way they interact with parents of all students.	**0.87**	–0.20	0.09	**0.84**	0.08	0.38	0.75
(27) Staff at my child's school ensure all parents are welcomed.	**0.87**	–0.16	0.05	**0.84**	0.12	0.35	0.73
(20) My child's teachers are enthusiastic about teaching students who have additional needs.	**0.86**	0.06	–0.04	**0.86**	0.32	0.30	0.74
(9) Teachers at my child's school ensure that students, who face challenges receive adequate support and guidance.	**0.84**	0.05	–0.003	**0.86**	0.31	0.33	0.74
(13) My child's teachers are fair and consistent when a student makes mistakes during the lessons.	**0.83**	0.04	–0.02	**0.83**	0.29	0.31	0.70
(25) Teachers are comfortable with accommodating students who frequently ask questions.	**0.83**	0.01	0.02	**0.84**	0.27	0.34	0.71
(12) I am happy that my child is at this school.	**0.80**	0.17	–0.02	**0.85**	0.41	0.33	0.74
(15) Teachers and other staff in my child's school ensure that students are included in all school activities.	**0.80**	0.03	0.07	**0.83**	0.29	0.38	0.70
(24) If my child has been bullied by others, the school acts in an appropriate manner.	**0.79**	-0.03	0.01	**0.79**	0.22	0.31	0.62
(7) My child's teachers give positive feedback when students do well at school.	**0.78**	0.02	0.04	**0.81**	0.27	0.35	0.66
(23) When my child is feeling frustrated and/or anxious, he/she can talk to someone at school.	**0.77**	–0.002	0.007	**0.77**	0.24	0.30	0.59
(6) Teachers and other staff at the school are friendly to my child.	**0.76**	0.10	–0.03	**0.78**	0.33	0.29	0.62
(19) If my child is facing any difficulties at school, there is at least one teacher/adult whom she/he can contact for support.	**0.73**	0.04	0.03	**0.75**	0.27	0.31	0.56
(4) My child receives appropriate help when needed.	**0.72**	0.20	0.05	**0.80**	0.43	0.37	0.68
(5) My child's teachers create engaging and enjoyable lessons.	**0.65**	0.27	0.07	**0.76**	0.49	0.38	0.65
(21) I am satisfied with my child's achievements at school.	**0.55**	0.29	0.14	**0.69**	0.49	0.41	0.58
(2) My child enjoys participating in their class(es).	0.30	**0.78**	–0.03	0.53	**0.87**	0.26	0.83
(3) My child looks forward to participating in classroom activities.	0.30	**0.73**	–0.03	0.51	**0.82**	0.24	0.74
(1) My child enjoys going to school.	0.43	**0.69**	–0.05	0.62	**0.81**	0.27	0.81
(14) My child tries to do her/his best in all lessons.	–0.12	**0.41**	0.19	0.08	**0.41**	0.23	0.20
(11) My child has at least one very good friend at school.	–0.10	0.15	**0.83**	0.26	0.30	**0.83**	0.71
(17) My child's classmates invite him/her to go out socially (e.g., to birthday parties).	0.11	–0.11	**0.81**	0.39	0.10	**0.83**	0.70
(10) My child is liked by peers in his/her class.	0.08	0.21	**0.69**	0.40	0.38	**0.76**	0.63
(18) My child's teachers set high expectations for all learners.	0.29	–0.20	**0.46**	0.40	–0.02	**0.52**	0.36

Items highlighted in bold represent which items loaded on each component for pattern coefficients and structure coefficients.

TABLE 3 | Correlations between parental perception of inclusion climate scale (PPICS) components.

	Component 1: Teacher and School Support	Component 2: Student Engagement	Component 3: Friendships
Component 1: Teacher and School Support	1.00	–	–
Component 2: Student Engagement	0.31	1.00	–
Component 3: Friendships	0.38	0.22	1.00

a series of one-way between groups ANOVA and independent samples *t*-tests were conducted. To control for Type 1 errors across multiple tests, Bonferroni's adjustment was applied, resulting in a new alpha cut off value of 0.01. There were no significant differences in parent ratings of inclusion climate across the total scale or any of the subscales according to school location (regional/rural, suburban, urban), school type (mainstream primary, mainstream secondary, special class in a mainstream school, other), level of support provided by the school (minimal or no support, some support, moderate support, extensive support, not sure) or child gender (male, female, gender diverse). There were also no significant differences in ratings of inclusion climate for parents who reported their child as having a cognitive disability, physical disability, sensory disability or not as measured by the total scale and each of the subscales.

A significant difference between groups was identified for parent ratings of inclusion climate on the total scale according to school sector (Catholic, government or independent), $F(2,181) = 4.46$, $p = 0.01$. The effect size, calculated using eta squared was 0.05 representing a small to medium effect (Cohen, 1988). *Post hoc* comparisons using the Tukey HSD test indicated that the mean parental ratings of inclusion climate on the total scale for children who attend independent schools ($M = 76.36$; $SD = 15.52$) was significantly higher than the mean parental ratings of inclusion climate on the total scale for children who attend government schools ($M = 65.90$; $SD = 19.49$). A significant difference between parental ratings of inclusion climate according to school sector was also identified for the Teacher and School Support subscale, $F(2,181) = 4.25$, $p = 0.01$. The effect size, calculated using eta squared was 0.04 representing a small to medium effect. *Post hoc* comparisons using the Tukey HSD test indicated that the mean parental ratings on the Teacher and School Support subscale for children who attend independent schools ($M = 56.52$; $SD = 12.70$) was significantly higher than the mean parental ratings on the Teacher and School Support subscale for children who attend government schools ($M = 47.84$; $SD = 16.19$). Overall, it appears that parents of children attending independent schools are more satisfied with the inclusion climate at their child's school when compared to those attending Catholic or public schools.

A significant difference between groups was also identified for parent ratings of inclusion climate on the Student Engagement subscale according to whether students were reported as having a social emotional disability or not, $t(187) = 2.76$, $p = 0.006$ (two-tailed), such that parents of students with a social emotional disability provided lower ratings of their child's engagement in school ($M = 9.11$), compared to parents of students without a social emotional disability ($M = 10.25$). The magnitude of the differences in means (mean difference = 1.14, 95% CI: 0.32 to 1.96) as measured by eta squared was 0.04 representing a small to moderate effect.

Finally, the difference between groups according to parental gender was also approaching significance for ratings of inclusion on the Student Engagement subscale, $t(185) = 2.12$, $p = 0.03$ (two-tailed), and the Friendships subscale, $t(185) = 2.20$, $p = 0.02$ (two-tailed), such that fathers reported higher levels of satisfaction with their child's engagement and enjoyment of school as measured by the Student Engagement subscale and also higher levels of satisfaction with their peer relationships as measured by the Friendships subscale as compared to mothers.

DISCUSSION

Although parental perceptions have been identified as being important in enabling inclusive education (Palmer et al., 2001), research in this area has been limited by the lack of valid and reliable measures. The current study therefore sought to explore the psychometric properties of the newly developed PPICS and to investigate the demographic characteristics of parents that might influence perceptions of inclusion climate as measured by the scale. The study yielded several findings that contribute to the knowledge-base in the field, with implications for policy, practice and research.

Results of PCA suggested a three-factor structure for the PPICS: Teacher and School Support; Student Engagement; and Friendships, with the scale overall and each of the three subscales possessing strong internal consistency. The focus of each of the three subscales was also consistent with previous research which has investigated the factors associated with parental experiences of inclusive education (e.g., Scheepstra et al., 1999; Duhaney and Salend, 2000; De Boer et al., 2010; Stevens and Wurf, 2020). The Teacher and School Support subscale allows measurement of parental satisfaction with the support provided by teachers and schools more broadly in facilitating inclusive education for students. Although there is a lack of research investigating parental perceptions regarding inclusive teaching practices (Paseka and Schwab, 2020), previous reviews have highlighted parental awareness of the importance of personalized and differentiated support in providing effective inclusive education, as well as identifying parental concerns regarding a lack of teacher training and resources available to schools to support the inclusion of all students (Duhaney and Salend, 2000; De Boer et al., 2010; Stevens and Wurf, 2020). The Teacher and School Support subscale may therefore provide useful information to better understand parental perspectives of the effectiveness of inclusive policies and practices in schools, highlighting areas of

strength but also identifying opportunities for improvement to ensure the inclusion of all students. Considering the overall score on the Teacher and School Support subscale was somewhere in the middle, it is clear that schools could do more in supporting all students but particularly those students who have additional needs. For example, identifying opportunities to build the capacity of teachers to ensure that students who face challenges receive adequate support and creating a whole school culture of inclusion where all teachers are confident and enthusiastic about teaching students with additional needs, and where all students and parents are treated with respect.

Similarly, previous research has identified parental concerns regarding their child's acceptance and inclusion by peers as an important factor influencing their satisfaction with inclusive education (Duhaney and Salend, 2000). Research has also identified social participation and the opportunity to develop friendships as being essential factors that influence a parents' preference for inclusive educational settings overall (Scheepstra et al., 1999). Given some of the challenges associated with the social participation of children with additional needs in mainstream schools, including the experience of fewer friendships and less acceptance by peers (e.g., Bramston et al., 2002; Pijl et al., 2008) and the importance of social relationships in facilitating a sense of inclusion and belonging in school (e.g., Balluerka et al., 2016; Ellery, 2019), the Friendships subscale provides the opportunity for consistent measurement regarding parental perceptions of this element of inclusion climate, which may assist schools to better target supports as needed. Finally, the Student Engagement subscale provides a measure of parental satisfaction with their child's enjoyment of and involvement with school. Given the identified importance of student engagement with education in contributing toward positive social emotional and learning outcomes (Goetz et al., 2006) this subscale enables the measurement of parental perceptions of this important dimension of inclusion climate and may provide schools with valuable information to further strengthen supports provided to students where needed.

The second aim of this study was to investigate differences in parental perceptions of inclusion climate as measured by the PPICS total score and each of the three subscales across a range of demographic characteristics. In general, parents reported being moderately satisfied with their inclusion climate at their child's school overall and with the support provided by teachers and schools, their child's engagement in school and their child's friendships as indicated by mean scores that fell in the middle range for the total score and each respective subscale. A significant difference between groups was identified for parent ratings of inclusion climate on the total scale according to school sector (Catholic, government or independent), such that parental ratings of inclusion climate for children who attend independent schools were significantly higher than parental ratings of inclusion climate for children who attend government schools. A significant difference between parental ratings of inclusion climate according to school sector was also identified for the Teacher and School Support subscale, such that parental ratings for children who attend independent schools were significantly higher than parental ratings for children who attend government schools. These findings are important given parental beliefs regarding the need for school access to appropriate resources and staff training to facilitate inclusion (e.g., Duhaney and Salend, 2000; De Boer et al., 2010; Stevens and Wurf, 2020) and underscore the importance of initiatives such as the NCCD to support the consistent collection of data across all school sectors regarding students with a disability and to improve access to the required supports to learning for all students. These findings also highlight an important area for future research and policy, to ensure all teachers and schools, regardless of sector, receive access to adequate training, resources and support to meet the needs of all learners.

A significant difference between groups was also identified for parent ratings of inclusion climate on the Student Engagement subscale according to whether students were reported as having a social emotional disability or not, such that parents of students with a social emotional disability provided lower ratings of their child's engagement in school, compared to parents of students without a social emotional disability. These findings are consistent with previous research which has identified differences in parental attitudes toward inclusion for child disability type, with less positive parental attitudes reported for children with social emotional disabilities and cognitive disabilities (Rafferty et al., 2001). This also highlights an important area for future research, policy and practice in the field, to further understand the barriers to student engagement and enjoyment of school for students with a social emotional disability and to ensure students with disability receive the support they need to experience a sense of engagement and belonging to school. Parental insights into this area as provided by the Student Engagement subscale of the PPICS may offer a useful tool to support schools to better understand the diverse needs of students and an opportunity to strengthen inclusive practices for the benefit of all students.

Finally, the difference between mothers and fathers for parent ratings of inclusion climate on the Student Engagement subscale and the Friendships subscale was also approaching significance, such that fathers reported higher levels of satisfaction with their child's engagement and enjoyment of school and also higher levels of satisfaction with their peer relationships. These findings are consistent with those reported by Kalyva et al. (2007) and may help elucidate conflicting findings in the research regarding differences in parental attitudes toward inclusion according to parent gender by allowing a more nuanced measurement of parental perceptions through each of the three subscales which investigate different dimensions of inclusion. The finding that fathers provided higher ratings than mothers on the Student Engagement and Friendships subscales may reflect different parental expectations and experiences in relation to their child's inclusion at school as a function of differing levels of involvement. There is some evidence to suggest that fathers may be less involved than mothers in their child's education (e.g., Pleck, 2010; McWayne et al., 2013), which may contribute toward different perceptions of their child's inclusion as compared to mothers. Also, research suggests fathers of children with additional learning needs may hold different expectations for their children in terms of their social engagement than mothers (e.g., Rowe and Kandel, 1997; Kalyva, 2010). The PPICS may

therefore provide schools with valuable insights to support the identification of strategies to strengthen inclusion on the basis of information provided by both mothers and fathers.

Limitations

Although this study makes several important contributions to the knowledge-base, the findings need to be considered within the context of a number of limitations. Firstly, although adequate for the conduct of PCA (e.g., Tabachnick et al., 2007), the sample size was relatively small. Although there are conflicting views in the literature regarding sample size requirements for PCA, most researchers agree that larger sample sizes (<300 participants) are preferable (e.g., Nunnally, 1978). While the participant to items ratio was acceptable in the current study, including several high loading marker variables, it would be beneficial for future research to replicate the current study with a larger sample of parents to confirm the identified factor structure. Secondly, the convenience sampling approach to recruitment may have resulted in a biased sample, such that parents with more positive views regarding their child's inclusion at school may have been more likely to participate in the study. Similarly, it is possible that parents from higher SES backgrounds and with higher levels of education may have been more likely to participate in this research. There is evidence to suggest that parental SES and education can influence parental views regarding inclusion (Balboni and Pedrabissi, 2000; Leyser and Kirk, 2004). However, the finding that parents reported moderate levels of satisfaction with the inclusion climate at their child's school as measured by the PPICS and each subscale provides some assurance that parents from a range of backgrounds and with a range of views responded to the survey. However, it is recommended that future research collect information regarding parental SES and education level to investigate the impact of these variables on parental perceptions of inclusion climate using the scale. Similarly, it is recommended that future research gather information regarding cultural background to examine any differences in responses on the PPICS and each subscale for parents from culturally and linguistically diverse backgrounds.

It is also acknowledged that school setting may impact on parents' perceptions of inclusion climate, such that parents of children attending special school settings may have different views and experiences than parents of children attending mainstream settings. To address this issue, we repeated the PCA with the sample of parents whose children attend mainstream schools only in order to identify any variations with the full sample (including parents of children attending special school settings). Results of these analyses did not reveal any substantial differences in the factor structure for the PPICS for the reduced sample. Furthermore, results of one-way between groups ANOVAs did not reveal any significant differences according to school setting on the total score PPICS or any of the subscales. Our definition of inclusive education for the purposes of this paper aligned with UNESCO's Policy Guidelines on Inclusive Education (United Nations Educational, Scientific and Cultural Organisation [UNESCO], 2009), which emphasizes the importance of strengthening the capacity of the entire education system (including special schools) to reach out to all learners. Consistent with this definition, we were keen to include the views of parents whose children attend special schools now or in the past as we believe their perspectives are important and add to our understanding of how the broader educational system can best meet the needs of all learners, regardless of school setting.

Future research may also further examine the psychometric properties of the scale including further testing of the validity of the proposed factor structure through Confirmatory Factor Analysis (CFA), investigation of the scale's concurrent and predictive validity, as well as exploration of the sensitivity of the scale in measuring change over time and in response to interventions designed to strengthen school inclusion. Longitudinal research may assist in gathering further information regarding the scale's usefulness as a tool to inform school policies and practices and in measuring the effectiveness of strategies to build the school's inclusion climate on the basis of parental perceptions.

CONCLUSION

Given the importance of parental voice in determining the quality of inclusive education, it is essential that parental experiences be measured using reliable and valid tools. This study has addressed a gap in the research in this field, through the development and testing of a tool to elicit parental perceptions of inclusion climate which can be used to guide practice and theory, as well as supporting researchers, school educators, and policy makers to collect evidence about the effectiveness of inclusive practices for students with a disability or additional support needs.

Furthermore, the identification of three subscales within the tool: Teacher and School Support; Student Engagement; and Friendships, enables measurement of parental experiences of these important dimensions of inclusion to provide schools with more nuanced information regarding strengths and areas for further development. It is anticipated that this tool will be helpful to provide schools with another source of evidence regarding their inclusion climate not only for students who may have additional needs, but for all students. It is recommended that future research further explore the psychometric properties of the scale, including investigation of any variations in responses to the scale according to parental SES, level of education and cultural background. It is also suggested that future research explore the usefulness of the scale in measuring the impact of evidence-based strategies such as teacher professional learning and support and school policies and procedures on the inclusion of all learners.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Monash University Human Research Ethics

Committee. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

US, SW, and PS contributed to the conception and design of the study and the development of the survey. FM was responsible for data collection and performed the statistical analysis. FM and US wrote the first draft of the manuscript, with input and review from SW and PS. All authors contributed to the manuscript revision, read, and approved the submitted version.

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REFERENCES

Ainscow, M., and Miles, S. (2008). Making education for all inclusive: where next? *Prospects* 38, 15–34.

Ashman, A. (2015). "Embracing Inclusion," in *Education for Inclusion and Diversity*, 5th Edn, ed. A. Ashman (Melbourne: Pearson Australia), 2–34.

Balboni, G., and Pedrabissi, L. (2000). Attitudes of Italian teachers and parents toward school inclusion of students with mental retardation: the role of experience. *Educ. Train. Mental Retardat. Develop. Disabil.* 35, 148–159.

Balluerka, N., Gorostiaga, A., Alonso-Arbiol, I., and Aritzeta, A. (2016). Peer attachment and class emotional intelligence as predictors of adolescents' psychological well-being: a multilevel approach. *J. Adoles.* 53, 1–9. doi: 10.1016/j.adolescence.2016.08.009

Bartlett, M. S. (1954). A note on the multiplying factors for various χ 2 approximations. *J. Royal Statistic. Soc. Series B* 16, 296–298.

Bossaert, G., Colpin, H., Pijl, S. J., and Petry, K. (2013). Truly included? A literature study focusing on the social dimension of inclusion in education. *Int. J. Inclus. Educ.* 17, 60–79. doi: 10.1080/13603116.2011.580464

Bramston, P., Bruggerman, K., and Pretty, G. (2002). Community perspectives and subjective quality of life. *Int. J. Disabil. Dev. Educ.* 49, 385–397. doi: 10.1080/1034912022000028358

Carter, E., Swedeen, B., Cooney, M., Walter, M., and Moss, C. (2012). 'I don't have to do this by myself?' Parent-led community conversations to promote inclusion. *Res. Practice Persons Severe Disabil.* 37, 9–23. doi: 10.2511/027494812800903184

Cohen, J. W. (1988). *Statistical Power Analysis for the Behavioral Sciences*, 2nd Edn. Hillsdale, NJ: Lawrence Erlbaum Associates.

Commonwealth of Australia (2021). *Nationally Consistent Collection of Data on School Students with Disability: 2022 Guidelines*. Available online at: https://www.nccd.edu.au/sites/default/files/2022%20NCCD%20Guidelines-final-revised-2.pdf (accessed February 15, 2022).

De Boer, A., Pijl, S. P., and Minnaert, A. (2010). Attitudes of parents towards inclusive education: a review of the literature. *Eur. J. Special Needs Educ.* 25, 165–181. doi: 10.1080/08856251003658694

De Vroey, A., Struyf, E., and Petry, K. (2016). Secondary schools included: a literature review. *Int. J. Inclus. Educ.* 20, 109–135. doi: 10.1080/13603116.2015.1075609

Dessemontet, R., and Bless, G. (2013). The impact of including children with intellectual disability in general education classrooms on the academic achievement of their low-, average-, and high-achieving peers. *J. Intell. Dev. Disabil.* 38, 23–30. doi: 10.3109/13668250.2012.757589

Duhaney, L. M. G., and Salend, S. J. (2000). Parental perceptions of inclusive educational placements. *Remed. Special Educ.* 21, 121–128. doi: 10.1177/074193250002100209

Ellery, T. (2019). Belonging as a Pathway to Inclusive: An Inquiry into Supporting Inclusive Practice in Secondary Schools. *Kairaranga* 20, 52–62. doi: 10.1016/j.socscimed.2021.113984

Fan, X., and Chen, M. (2001). Parental involvement and students' academic achievement: a meta-analysis. *Educ. Psychol. Rev.* 13, 1–22. doi: 10.1023/A:1009048817385

Giangreco, M. F., Edelman, S., Cloninger, C., and Dennis, R. (1993). My child has a classmate with severe disabilities: what parents of nondisabled children think about full inclusion. *Dev. Disabil. Bull.* 21, 77–91.

Goetz, T., Hall, N. C., Frenzel, A. C., and Pekrun, R. (2006). A hierarchical conceptualization of enjoyment in students. *Learn. Instruct.* 16, 323–338.

Göransson, K., and Nilholm, C. (2014). Conceptual diversities and empirical shortcomings–a critical analysis of research on inclusive education. *Eur. J. Special Needs Educ.* 29, 265–280.

Griffin, M. M., and Steinbrecher, T. D. (2013). Large-scale datasets in special education research. *Int. Rev. Res. Dev. Disabil.* 45, 155–183.

Hattie, J. (2009). *Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement*. Abingdon: Routledge.

Hehir, T., Grindal, T., Freeman, B., Lamoreau, R., Borquaye, Y., and Burke, S. (2016). *A Summary of the Evidence on Inclusive Education*. Brazil: Abt Associates.

Hunt, P., Staub, D., Alwell, M., and Goetz, L. (1994). Achievement by all students within the context of cooperative learning groups. *J. Assoc. Persons Severe Handicaps* 19, 290–301. doi: 10.1177/154079699401900405

Jordan, A., Schwartz, E., and McGhie-Richmond, D. (2009). Preparing teachers for inclusive classrooms. *Teach. Teach. Educ.* 25, 535–542. doi: 10.1016/j.tate.2009.02.010

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika* 39, 31–36. doi: 10.1007/BF02291575

Kalyva, E. (2010). Multirater congruence on the social skills assessment of children with Asperger syndrome: self, mother, father, and teacher ratings. *J. Autism Dev. Disord.* 40, 1202–1208. doi: 10.1007/s10803-010-0978-y

Kalyva, E., Georgiadi, M., and Tsakiris, V. (2007). Attitudes of Greek parents of primary school children without special educational needs to inclusion. *Eur. J. Special Needs Educ.* 22, 295–305. doi: 10.1080/08856250701430869

Kattari, S. K., Lavery, A., and Hasche, L. (2017). Applying a social model of disability across the life span. *J. Hum. Behav. Soc. Environ.* 27, 865–880.

Leyser, Y., and Kirk, R. (2004). Evaluating inclusion: an examination of parent views and factors influencing their perspectives. *Int. J. Disabil. Dev. Educ.* 51, 271–285. doi: 10.1080/1034912042000259233

McWayne, C., Downer, J. T., Campos, R., and Harris, R. D. (2013). Father involvement during early childhood and its association with children's early learning: a meta-analysis. *Early Educ. Develop.* 24, 898–922.

Merrigan, C., and Senior, J. (2021). Special schools at the crossroads of inclusion: do they have a value, purpose, and educational responsibility in an inclusive education system? *Irish Educ. Stud.* 40, 1–17.

Mitchell, M. M., Bradshaw, C. P., and Leaf, P. J. (2010). Student and teacher perceptions of school climate: a multilevel exploration of patterns of discrepancy. *J. School Health* 80, 271–279. doi: 10.1111/j.1746-1561.2010.00501.x

Nunnally, J. O. (1978). *Psychometric Theory*. New York: McGraw-Hill.

Palmer, D. S., Fuller, K., Arora, T., and Nelson, M. (2001). Taking sides: parent views on inclusion for their children with severe disabilities. *Except. Child.* 67, 467–484. doi: 10.1177/001440290106700403

Paseka, A., and Schwab, S. (2020). Parents' attitudes towards inclusive education and their perceptions of inclusive teaching practices and resources. *Eur. J. Special Needs Educ.* 35, 254–272. doi: 10.1080/08856257.2019.1665232

Pijl, S. J., Frostad, P., and Flem, A. (2008). The social position of pupils with special needs in regular schools. *Scand. J. Educ. Res.* 52, 387–405. doi: 10.1080/00313830802184558

Pleck, J. H. (2010). "Paternal involvement: Revised conceptualization and theoretical linkages with child outcomes," in *The Role of the Father in Child Development*, 5th Edn, ed. M. E. Lamb (Hoboken, NJ: Wiley), 58–93.

Rafferty, Y., Boettcher, C., and Griffin, K. W. (2001). Benefits and risks of reverse inclusion for preschoolers with and without disabilities: parents'

perspectives. *J. Early Intervent.* 24, 266–286. doi: 10.1177/10538151010240 0403

Round, P. N., Subban, P. K., and Sharma, U. (2016). 'I don't have time to be this busy' Exploring the concerns of secondary school teachers towards inclusive education. *Int. J. Inc. Educ.* 20, 185–198. doi: 10.1080/13603116.2015.107 9271

Rowe, D. C., and Kandel, D. (1997). In the eye of the beholder? Parental ratings of externalizing and internalizing symptoms. *J. Abnorm. Child Psychol.* 25, 265–275. doi: 10.1023/a:1025756201689

Ruijs, N. M., and Peetsma, T. T. (2009). Effects of inclusion on students with and without special educational needs reviewed. *Educ. Res. Rev.* 4, 67–79.

Ryndak, D., Jackson, L. B., and White, J. M. (2013). Involvement and progress in the general curriculum for students with extensive support needs: K–12 inclusive-education research and implications for the future. *Inclusion* 1, 28–49. doi: 10.1352/2326-6988-1.1.028

Ryndak, D. L., Downing, J. E., Jacqueline, L. R., and Morrison, A. P. (1995). Parents' perceptions after inclusion of their children with moderate or severe disabilities. *J. Assoc. Persons Severe Handicaps* 20, 147–157.

Salend, S. J. (1998). *Effective Mainstreaming: Creating inclusive Classrooms*, 3rd Edn. Columbus, OH: Merrill/Prentice Hall.

Scheepstra, A. J., Nakken, H., and Pijl, S. J. (1999). Contacts with classmates: the social position of pupils with Down's syndrome in Dutch mainstream education. *Eur. J. Special Needs Educ.* 14, 212–220. doi: 10.1080/0885625990140303

Schwab, S., Sharma, U., and Loreman, T. (2018). Are we included? Secondary students' perception of inclusion climate in their schools. *Teach. Teach. Educ.* 75, 31–39. doi: 10.1016/j.tate.2018.05.016

Starr, E. M., and Foy, J. B. (2012). In parents' voices: the education of children with autism spectrum disorders. *Remed. Spec. Educ.* 33, 207–216. doi: 10.1177/ 0741932510383161

Stevens, J. P. (2012). *Applied Multivariate Statistics for the Social Sciences*. New York: Routledge.

Stevens, L., and Wurf, G. (2020). Perceptions of inclusive education: a mixed methods investigation of parental attitudes in three Australian primary schools. *Int. J. Inclusive Educ.* 24, 351–365. doi: 10.1080/13603116.2018.1464068

Stoiber, K. C., Gettinger, M., and Goetz, D. (1998). Exploring factors influencing parents' and early childhood practitioners' beliefs about inclusion. *Early Child. Res. Quart.* 13, 107–124. doi: 10.1016/S0885-2006(99)80028-3

Tabachnick, B. G., Fidell, L. S., and Ullman, J. B. (2007). *Using Multivariate Statistics*. Boston, MA: Pearson.

Thurstone, L. L. (1947). *Multiple-Factor Analysis: A Development and Expansion of The Vectors of Mind*. Chicago: University of Chicago Press.

Turnbull, A. A., Turnbull, H. R., Erwin, E. J., Soodak, L. C., and Shogren, K. A. (2015). *Families, Professionals, and Exceptionality: Positive Outcomes through Partnerships and Trust*, 7th Edn. Boston: Pearson.

United Nations Educational, Scientific and Cultural Organisation [UNESCO] (2009). *Policy Guidelines on Inclusion in Education*. Paris: UNESCO.

United Nations (2006). *Convention on the Rights of Persons with Disabilities*. New York: United Nations.

UN Committee on the Rights of Persons with Disabilities [CRPD] (2016). *General comment No. 4, Article 24: Right to inclusive education*. Available online at: CRPD/C/GC/4: https://www.refworld.org/docid/57c977e34.html

Voltz, D. L., Brazil, N., and Ford, A. (2001). What matters most in inclusive education: a practical guide for moving forward. *Intervent. School Clin.* 37, 23–30.

Wilhelmsen, T., and Sørensen, M. (2019). Physical education-related home–school collaboration: the experiences of parents of children with disabilities. *Eur. Phys. Educ. Rev.* 25, 830–846. doi: 10.1080/1356336X18 777263

Wilhelmsen, T., Sørensen, M. S., Seippel, Ø, and Block, M. E. (2021). Parental satisfaction with inclusion in physical education. *Int. J. Inclusive Educ.* 25, 1061–1078. doi: 10.1080/13603116.2019.1597930

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Research about inclusive education: Are the scope, reach and limits empirical and methodological and/or conceptual and evaluative?

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This paper argues for a broader conception about research into inclusive education, one that extends beyond a focus on empirical factors associated with inclusive education and the effects of inclusive education. It starts with a recent summary of international research into the effects of inclusive education on students with SEN/disabilities and those without. On the basis of this review, it examines a model showing the complexity of factors involved in asking questions about the effects of inclusive education. This complexity reflects the ambiguity and complexity of inclusive education, which is discussed in terms of varied contemporary positions about inclusive education. The analysis illustrates how there has been more focus on thin concepts of inclusion (as setting placement or in general terms) rather than its normative and value basis, which reflects a thick concept of inclusion. The paper concludes by illustrating with the use of a version of the capability approach how there are value tensions implicit in inclusion about difference and about personal vs. public choice. This requires value clarification and some settlement about the balance of values, which is where deliberative democratic principles and processes have a crucial role. The proposed answer to the paper's question about the scope, reach and limits of research in inclusive education is that such research involves both empirical, methodological, and evaluative matters. Educational research about inclusive education is not just empirical, it also involves value and norm clarification, a process which has been too often ignored.

KEYWORDS

inclusive education, inclusion, research, effects, evaluations, thin and thick concepts

Introduction

In asking about the scope, reach and limits of research in inclusive education in this paper, the aim is to examine some contemporary findings in one area of research in inclusive education and how value positions are implicated. Policy makers are interested in the effects of inclusive education and researchers are keen to provide

evidence that bears on policy making. The paper will start off with a research review which was conducted as a specific response to a policy maker's request. However, this kind of research, which can be described as treating inclusion as a technical matter, has been widely criticized. For example, Slee and Weiner (2001) identify two groups of researchers; (i) those who work within, what they call the "positivist paradigm," accept the way things are, attempt to make marginal reforms and who criticize "full inclusion" as ideological and (ii) those who see inclusive education as cultural politics and call for educational reconstruction. Though these authors align with the second group, it is interesting that the first author subsequently uses research which treats inclusive education as a technical matter to support a position about inclusive education. Subsequently, Slee (2018) has referred to a review by Hehir et al. (2016) that depends on a systematic review of technical style studies to support his claims about how: "adjustments made to classrooms, to curriculum and to pedagogy to render classrooms more inclusive and enabling also benefit students without disabilities" (p. 69).

In discussing what this review of Inclusive Education Effects (IE) can tell us and what it cannot, the paper will examine a model showing the complexity of factors involved in asking questions about the effects of inclusive education. It then moves on to consider what other kinds of questions might be asked in research about inclusive education that cannot be addressed through effects-focussed methodologies. At this point in the paper, the issue arises about how the results from empirical studies relate to what is called inclusion or inclusive education. So, varied perspectives on inclusive education are summarized, including those of some parents, based on a recent study of parents' experiences of deciding to opt for special schooling. These perspectives reflect the ambiguity and complexity of inclusive education, illustrating how the concept is often used in a thin way in empirical studies by focusing more on its empirical identification and causal relationships than its more expanded normative and value basis, a thick concept of inclusion. The paper concludes by using a version of the capability approach to examine issues about "full inclusion" and what can be called a more balanced or reasoned inclusion. This reveals two key dilemmas about difference and about personal vs. public choice that are relevant to providing inclusion with a well-founded value basis. The paper concludes with the claim that research into inclusive education involves technical, methodological, and evaluative matters. It proposes a role for public deliberation in clarifying and settling these value and norm clarification, process which have been largely ignored.

Review of inclusive education effects

The aims of this review were to (i) identify and summarize contemporary international research on IE effects and (ii) draw implications for policy, practice and future research in IE field. The context of this review was that it was undertaken in 2019 by three members of the Lead Group of the SEN Policy Research Forum (SENPRF)[1] following informal communications with the Government Department for Education (DfE) about national SEN and inclusion policy. The Forum was asked to summarize relevant research which was then presented as well to the national SEN Review (Gray et al., 2020).

Ten sources were identified coming from a 2 stage process. Firstly, the authors identified relevant papers already known to them (4 papers). This was then supplemented, secondly, by a data base search using ERIC and ERC databases for the period 2009–2019. Search terms involved all variations of inclusion/inclusive education/mainstreaming × achievement/social emotional X effects. For the ERIC database 630 articles were retrieved with only 5 identified as relevant; for the ERC database 544 articles were retrieved with only one identified as relevant. In this way 10 papers were identified (see Gray et al., 2020 for more details). Five of the papers were reviews of international studies (Ruijs and Peetsma, 2009; Dyssegaard and Larsen, 2013; Oh-Young and Filler, 2015; Hehir et al., 2016; Szumski et al., 2017). Some of these reviews included studies conducted before the 2009 cut-off date used for this review. Three involved a quasi-experimental designs, two with collected data and one using national administrative data. Four involved multi-variate statistical analyses of longitudinal data; with 2 using cohort studies. The papers were either from the United States or European countries, with none from the United Kingdom. Inclusion was mostly defined in the studies covered in terms of a mainstream class setting compared to a special class/school setting. Few gave details about the setting. Where they did, the proportion of time in the mainstream class was reported (e.g., greater or less than 80% of time). In one example, an inclusive setting was defined as being in general classrooms with several hours support per week and receiving therapy support too. Special school was described as small classes (5–8 children) taught by a specialist teacher with an assistant and therapy support (Sermier Dessemontet et al., 2012).

The review was organized into four broad areas: (i) academic effects on students with SEN/disabilities and (ii) social-emotional effects on students with SEN/disabilities, (iii) academic effects on students without SEN/disabilities, and (iv) social-emotional effects on students without SEN/disabilities. For the first area, five sources were used with the balance of findings showing more academic gains of students with a range of SEN in ordinary rather than separate settings. These students were broadly characterized as having mild to moderate

1 SEN Policy Research Forum, an independent network based in the United Kingdom, that aims to contribute intelligent analysis and the use of knowledge and experience to promote the development of policy and practice for children and young people with special educational needs and disabilities.

SEN/disabilities with the gains being in mostly literacy, but some in maths. One of the review papers reminded readers that this evidence did not show that "full" or "complete" inclusion had higher gains to special education settings for students with mild disabilities.

For the review area, academic effects for non-disabled students, the reviews of older studies, done before 2010 presented a mixed overall picture. However, on balance most studies showed more neutral or positive than negative effects for non-disabled students. However, some more recent individual studies rather than reviews indicated specific weak to moderate negative academic effects on non-disabled students, e.g., having classmates with emotional/behavior difficulties (Fletcher, 2010) or special school returners (Gottfried and Harven, 2015). Other studies indicated some small positive effects, associated with positive teacher attitudes, their training, strategies geared to diverse needs and problem-solving oriented schools (Hehir et al., 2016). In addition, reviews were mixed about the negative academic effects of students with emotional and behavior difficulties on students without SEN/disabilities.

For the review area about social-emotional effects on SEN/disabled students, there were fewer studies than for academic effects. Here the sources showed mixed results. While one review referred to mostly positive outcomes (Hehir et al., 2016), the other significant review reported that no conclusions can be drawn (Ruijs and Peetsma, 2009). One specific recent study found no adaptive behavior differences across settings (Sermier Dessemontet et al., 2012). For the fourth review area about social emotional effects for non-disabled students, there were also relatively few studies. These were recorded in review papers and showed some positive effects, e.g., less discriminating attitudes, increased acceptance, and understanding.

Research limitations and some relevant conclusion

As in other educational research focussed on effects, there are various design limitations to these inclusion effect studies. These studies use a range of approaches from quasi-experimental designs (QED) to multi-variate statistical analyses of longitudinal data and administrative data sets. With QED, as there is no randomized group allocation, there can be some "participant bias," e.g., students in inclusive settings might have higher starting levels of functioning. Many of these papers refer to a series of limitations. Studies often use differing definitions of the compared settings. Comparisons are also often defined in terms of placements, e.g., special school v. ordinary school or special class/unit vs. ordinary class, not in terms of school-level (e.g., school ethos), or class level factors (e.g., quality of teaching). Findings relate to specific student age groups and areas of SEN/disability and not others. There is also the risk that other areas of SEN/impairment may not be controlled for in comparisons. Sometimes SEN/disability is also used generically to cover a range of areas and so the comparison becomes between SEN v non-SEN or disabled vs. non-disabled. How these terms are used can also vary internationally. In terms of statistical analyses, sample sizes may be under-powered to draw confident conclusions. Some effect measures, especially for the social-emotional effects could have improved measurement characteristics (e.g., reliability and validity).

For the purposes of this paper three main concluding points can be drawn from this review of inclusive education effects. The first point is that the basic typology of effects (academic and socio-emotional inclusion effects for SEN/disabled students and non-SEN/disabled children) needs to take account of other factors. These include the kinds of SEN/disability, phases of schooling, quality of support for learning and structural class and school factors. Some of these factors might moderate the effects. These are illustrated in **Table 1**.

What this framework indicates is the multi-dimensionality of inclusive education and the complexity of factors that relate to their varied effects. This implies that there is a need for more nuanced policy and practice questions about inclusive education and consequently more nuanced kinds of studies about inclusive education. This would counter the commonly found preferences that look for simple generalized empirical relationships to confirm pre-existing positions; avoiding what has been called the pervasive confirmation bias (Wason, 1960).

TABLE 1 Framework of focus and interacting factors relevant to the effects of inclusive education.

Effects of inclusive education:	
What effects?	Subject learning (literacy, maths, other)
	Affective and social participation
For whom?	Student with SEN and student without SEN
What areas of SEN?	e.g., Specific learning difficulties, social emotional and mental health difficulties, ASD etc.
When/where?	Differ across time and country?
SEN intersection with other areas?	Gender, age, ethnicity, in care etc.
What counts as inclusion?	Full-time in mainstream class (FT)
	FT with support (varied types)
	Part-time with withdrawal (different degrees)
	Compared to what is not inclusion
	Special school
	Special class
Context?	
School factors	e.g., Capabilities of accommodating/students with disabilities/SEN
	School climate/vision
Class factors	e.g., Size, grouping, teaching strategies, class climate
Pupil factors	e.g., Gender of other pupils

The second main point to make from this review is that the balance of evidence finds neutral or small positive effects as opposed to negative effects. This means that adopting an "on balance" position is the wise way to summarize the review outcome. Both positive and negative effects need to be understood in terms of the complex interaction of individual, class and school factors, on one hand, and what counts as inclusive education and the specific types of effects, on the other. The value of a framework like in **Table 1** is that it reflects points from research findings about factors in those interactions that are more or less alterable, with this having policy implications. The third main point of conclusion from this review is that it is useful to develop this kind of mapping of the kinds of interacting factors related to questions about inclusion effects. This is relevant both to the design of further studies and to drawing conclusions for policy.

Unaddressed questions about inclusive education

The kinds of effectiveness research discussed above still leave some crucial questions about inclusive education unaddressed. Although there is scope for more sophisticated research designs to evaluate the effects of inclusive education, the use of multivariate statistical techniques involves large samples which are often not available, especially in some areas of SEN/disability, e.g., severe and profound and multiple learning difficulties SLD/PMLD). So, there are questions still to be asked about the inclusion of students with SLD/PMLD and those with significant emotional and behavior difficulties. These are difficult to address partly because of the relatively low incidence of these areas of difficulties but also the scarcity of practices involving these students in what would be called inclusive settings (Agran et al., 2020). In a rare US quasi-experimental study, for example, 15 pairs of early years and primary aged children with "extensive support needs," were matched across 12 characteristics based on their first complete Individual Education Program (IEP). One child in each pair was included in general education for 80% or more of their day, while the other was in a separate special education class (Gee et al., 2020). Extensive analyses were shown to indicate more engagement and higher outcomes in general classrooms. But, in terms of what this study implies for inclusive education, there are no details of the students' level of intellectual disability in these pairs and so we do not know if they had severe/profound intellectual disabilities or in United Kingdom terms SLD or PMLD. Nor does the report indicate details about the type of support and adaptations that were made for those in the general class or whether they spent 20% of their time in a separate class setting.

In the United Kingdom by comparison, reports about inclusive practices are in the form of cases or demonstration models of inclusive practice. For example, an illustration of inclusive practice with students with PMLD involved a common interactive music program for learners with PMLD and those from a mainstream primary school that enabled learning for all involved (Education Wales, 2020). Though this inclusive program took place in a special school setting, it could have also been in an ordinary school setting. Both the primary school and special school children benefitted in their own ways from the joint activities, which seemed to enable its inclusiveness through it focus on the expressive arts.

The implication is that effectiveness research about inclusive education does not bear directly on the basic questions about the future of special classes and schools, settings which have been interpreted as being inconsistent with "full inclusion" (UNICEF, 2017). The uses of terms like "full inclusion" or an "inclusive system at all levels" are unclear about whether they can involve some part-time separate settings (e.g., 20% of class time) or not. They are also unclear about whether fixed term (e.g., 1 year) placements in separate settings are compatible with an inclusive system and whether an "inclusive system at all levels" implies the closure of all special schools in the foreseeable future.

Critiques of "full inclusion" over many years have been about the position representing a "moral absolute" that requires the elimination of any alternative placements or settings to ordinary class placements (Kauffman et al., 2021, p. 20). For Kauffman and colleagues, the "full inclusion" focus on place rather than instruction or teaching is deeply problematic. They question those interpretations of Article 24 of the CRPD (UN, 2006) that the Convention implies "full inclusion" without attention to the quality of teaching and alternative placements. However, what both advocates of "full inclusion" and these above critics have in common is that they both use false oppositions or dichotomies; with one pole being favored and the other pole rejected. They mirror each other in this kind of thinking.

There have, however, also been more nuanced arguments about inclusion over the years. Fuchs and Fuchs (1998), for example, identified strengths and limitations in arguments of both "full inclusionists" and "inclusionists." They see the former group (full inclusionists) as focussed more on children with more severe disabilities (low incidence needs), prioritizing social attitude and interaction learning, while the latter (inclusionists) are focussed more on children with high incidence needs, prioritizing academic learning and accepting a continuum of provision. Fuchs and Fuchs (1998) raise the question of whether "full inclusionists" are willing to "sacrifice children's academic or vocational skills" for their social priorities (Fuchs and Fuchs, 1998, p. 312). This identifies the differences over inclusive education as one of value priorities, a point to be returned to later in this paper.

One way to take a broader perspective is to consider the practice and theory of a "full inclusive education" commitment. From the practice perspective, we can examine the Canadian New Brunswick system, which is cited as an example of "full inclusion" (National Council for Special Education [NCSE],

2019). In a statement by the Porter et al. (2012), a core inclusive principle is that:

> "... public education is universal—the provincial curriculum is provided equitably to all students and this is done in an inclusive, common learning environment shared among age-appropriate, neighborhood peers" (p. 184).

However, in this publication evidence is given of the use of part-time and full-time "streaming" in primary and secondary schools and some alternative settings (0.4–1.5% across Francophone districts: p. 91). The reference in the above core principle to "common learning environments" is central to the definition of inclusive education. This phrase was introduced as an expansive definition:

> "to dispel the misperception that inclusion is having every learner in a regular classroom all the time, no matter what the circumstances" (AuCoin et al., 2020, p. 321).

By using this term "common learning environment" in this way and not referring to ordinary/mainstream class environments, the New Brunswick conception of inclusive education is open to use of some alternative settings which is inconsistent with "full inclusion" and compatible with the concept of a flexible continuum of provision.

Inclusive education: Concept, theory, and ambiguity

Given these ambiguities, on one hand, and the passions associated with inclusion and inclusive education, on the other hand, the analysis needs to consider the value of inclusion as this might inform some of the applied questions about inclusive education. In this regard, Felder (2018) has identified that inclusion tends to be a thin concept in empirical studies, like those discussed above. This is illustrated in the way the terms inclusion/inclusive are used in these studies. It is also why "what counts as inclusion" is an important part of the framework in **Table 1** about the focus and interacting factors relevant to the effects of inclusive education. What these empirical studies do is focus more on matters related to how to realize inclusive education than consider and justify its expanded normative and value basis, what Felder (2018) called a thick concept of inclusion.

For Felder, an important distinction here is between communal inclusion (gemeinschaft) and societal inclusion (gesellschaft), to use the German terms from the social theorist Tonnies. Societal inclusion is about social relationships formed through instrumental rationality, while communal inclusion is about social relationships found in friendships, love relationships and interpersonal ties. In this analysis, the structures of societal inclusion can influence what make communal inclusion possible. However, communal inclusion sets some limits to the extent to which this form of communal inclusion can be secured through human rights. Felder's analysis implies that human rights are not able to fully secure the social freedom and recognition, esteem or solidarity that are often neglected aspects of inclusion. In Felder's analysis inclusive education which ultimately depends on social inclusion depends on social intentionality or agents acting collectively. People need to be integrated in a cooperative societal context to use their freedoms and basic rights. This underlines the importance of people having a degree of freedom to decide where they want to be included and be associated with. And, if disabled people are to have similar freedoms as other people in positive terms, they require more goods than others, because of the problem of converting these resources into practical opportunities. This is the basic assumption deriving from the capability approach (Sen, 1979), which will discussed further below.

This thick concept on inclusion can also be contrasted with some current concepts of what inclusion means in inclusive education. Two leading concepts will be discussed and contrasted with a third which relates directly to students with more severe/profound disabilities. The first perspective, proposed by Warnock (2005) emphasizes that inclusion means the entitlement of everyone to learning in a personally relevant way, wherever this takes place. This concept of inclusion can imply and be used to justify separate settings for learning, e.g., special schools and classes in general schools, while overlooking the social effects and significance of separation, especially if it is imposed. Another leading concept of inclusion in inclusive education, associated with the Inclusion Index (Booth and Ainscow, 2011) focuses on increasing student participation and reducing exclusion from "the cultures, curricula and communities of local schools" (p. 6). This concept implies that "all are under same roof," a phrase used by Warnock (2005), with the onus on local ordinary schools to accommodate diversity. This concept says little about how much diversity can be accommodated nor whether restructuring local schools could include some internal school separation.

It is also useful to contrast these two leading concepts with a 40 year old concept of partial inclusion that relates specifically to students with more severe/profound disabilities (Baumgart et al., 1982). The basic premise of the principle of partial participation is that all severely disabled students have "a right to educational services that allow them to be the most that they can be" (p. 4). This implies engaging in as many different activities in as many different environments as instructionally possible. Baumgart et al. (1982) clarify that such partial participation requires individualized adjustments or modifications of typical environmental conditions. They also note that observing severely disabled and non-disabled students will show that they do not participate in activities to the same degree and in the same ways. This concept is characterized by its

strong focus on what is pedagogically possible, going beyond the generalities of the two more prominent recent concepts.

Different policy positions

The leading international policy position on inclusive education is in Article 24 of the Convention on the Rights of Persons with Disabilities (CRPD; UNICEF, 2017). The CRPD stresses that inclusive education is a fundamental human right for every child with a disability. It defines an inclusive education system as one that "accommodates all students whatever their abilities or requirements, and at all levels." This position is justified in various terms: the educational case is that all children learn more effectively in an inclusive system; the social case is that this contributes to more inclusive societies and the economic case that it is more cost-effective.

However, not all countries accept Article 24 as shown by the United Kingdom Government having ratified the UNCRPD but stating specific reservations about preserving parents right to choose a special school education. This position has been United Kingdom (England) policy for over a decade. For example, the results of the consultation about the Green Paper that preceded 2014 revised SEN and disability legislation, were interpreted as showing widespread support. The public consultation was interpreted as showing support for parents to have the right to express a preference for any state funded mainstream or special school (Department for Education [DFE], 2011).

It is revealing to compare these policy perspectives on inclusive education with those of parents who have selected special schools for their children with SEN/disabilities. A recent United Kingdom study examined the views of parents of pupils in special schools in the South West of England: their reasons for choosing special school, the extent to which they felt they had an independent choice, their views on alternative provision and their concepts of inclusive education (Satherley and Norwich, 2021). Analysis showed that the top three reported factors as influencing decisions were school atmosphere, caring approach to pupils and class size, a finding that connected with their concepts of inclusive education. Not only does this small-scale study show distinctive parental perspectives on schooling and the dilemmas they experienced in choosing provision for their children, but concepts of inclusive education that depart from some of those discussed above. Over half considered that high quality inclusive education provision meant a sense of belonging to a class and school and social acceptance by peers, on one hand, and a more individualized curriculum, on the other. In addition, for many parents the belonging, social acceptance and Individualized curriculum was found only in special schools. By contrast, quality inclusive education rarely meant a resource base or specialist unit attached to mainstream school (28%), joint placement (21%), co-located schools (19%) or mainstream provision only (8.8%). What characterizes these parents' perspectives was that they did not refer to placement, where provision is made. The UNCRP assumes that inclusion means placing students with disabilities within mainstream classes with appropriate adaptations (UNCRPD, 2016, p. 3). So, these parents mostly held different views from the dominant UNCRPD concept of inclusive education, discussed above.

The capability approach

A thick concept of inclusion in inclusive education, as discussed above, implies the importance of people having a degree of freedom to decide where they want to be included and with whom they associate. It was also suggested above that if disabled people are to have similar freedoms as other people, they require more resources than others, because of the problem of converting these resources into practical opportunities. This is where the capability approach developed by Sen (1979) can act as rich conceptual and value resource for thinking about inclusive education. Its discussion in this paper is not as a complete approach to the field,[2] but as the kind of framework that assists in thinking about what is involved in a just education system.

For Sen (1979), the capability approach is about evaluating someone's advantages in terms of his or her actual ability to achieve various valuable functionings as a part of living. Terzi (2014) expresses what a capability represents in terms of the "genuine, effective opportunities that people have to achieve valued functionings" (p. 124). What is distinctive about the capability approach is how it answers the political-ethical question about equality of what? Unlike perspectives which either focus on equality of resources or opportunities, the capability approach focuses on genuine opportunities. For Terzi, capabilities as genuine opportunities are important because they ensure that individuals can choose the kind of life they have reason to value. This also implies a fundamental role for agency in realizing the valued plans in one's life. This has implications for the balance of choice, especially where it concerns children and young people. It has also been argued that a capability-oriented approach needs to acknowledge children's agency in determining their own valued functionings and not just be determined by adults (Dalkilic and Vadeboncoeur, 2016). This introduces some nuance into how a capability approach might work in relation to education, but this is not the paper to discuss these matters further. There are also issues about determining the capability set to be equalized. In considering whether there are basic universal capabilities there are also questions about opting for adequacy rather than equality in capabilities and whether some capabilities require equality. These matters will also not be addressed here.

2 Sen indicated himself that the capability approach is an incomplete approach as it requires local democratic social choice in defining capabilities (Sen, 2017).

Where the capabilities approach is incomplete is in considering the design questions of how to equalize capabilities; how to organize education to achieve this goal? Two key questions will be considered in relation to this question:

i how are "valuable functionings" identified? This is about the balance between personal preferences (agency) vs. public choice (democracy);
ii how to address the dilemmas of difference? This is about recognition of difference as either enabling vs. stigmatizing (Norwich, 2013).

The second question about differences and differentiation will be dealt with first. In the capability approach thinking about equalizing capabilities is in terms of dignity. In these terms two ways of equalizing dignity can be considered from an educational perspective. One way of equalizing dignity is to respond to the individual functioning of all; this can be seen as about enabling learning for all. Another way is to avoid marking out students as different; this can be seen as avoiding the risk of stigma/humiliation. For example, some parents of children and young people are reluctant to seek out a diagnosis for their children, e.g., autism of ADHD, while others seek them out. These two ways of equalizing dignity can lead to a tension: differentiation as enabling but also risking stigma and devaluation, which can present a dilemma about difference/differentiation.

One way to connect how to address the dilemma of difference to conceptions of inclusion is in terms of the distinction which Cigman (2007) has made between "universal" and "moderate" inclusion. For Cigman, in "universal" inclusion, any marking out through separation of some children is to be avoided—through identification, different curricula, teaching and settings along a continuum of provision. This separation is regarded as a mark of devaluation and stigma; its avoidance is presented as a way of promoting respect. She contrasted this with "moderate" inclusion, that recognizes that promoting respect is also about identifying pupils' personal strengths, difficulties and circumstances in a way that is enabling and not just stigmatizing. Based on this thinking there can be two broad responses to dilemmas of difference:

- it is possible to respond to the individual functional requirements (enabling route) and to avoid separation (avoid stigmatizing route); there are no dilemmas of difference representing a "universal" inclusion perspective.
- It is possible to some extent to respond to the individual functional requirements (enabling route) and to avoid separation (avoid stigmatizing route), but not fully: there are some dilemmas of difference which can be resolved to some extent. This represents a "moderate" inclusion perspective, what might better be represented as a reasoned and balanced inclusion.

This line of thinking shows how political-ethical questions about equalizing capabilities implicate dilemmas of difference in concepts of inclusion in inclusive education.

Deliberative democracy and citizens' assemblies: Personal vs. public choice

The second question arising from issues linked to the capability approach is how are "valuable functionings" identified? This has been framed as about the balance between personal preferences (agency) and public or social choice (democracy). In the United Kingdom (English) SEN/disability policy context, there has been over several decades a strong adoption of a "parental choice—provision diversity" approach—or what has also been called a neo-liberal approach (Runswick-Cole, 2011). Here the choice is placed firmly with the individual. However, there has also been a persistent concern about United Kingdom (England) policy failure, which has been interpreted as reflecting an over-emphasis on personal preference rather than public choice (Lehane, 2017). This has even been recognized more recently by policy makers, including the contemporary Department for Education Review of SEN/disability policy and practice (Department for Education [DFE], 2022). This is a case of a Government having to confront the results of decades of policy which have not supported inclusive practices in a strategic way:

> "...the need to restore families" trust and confidence in an inclusive education system with excellent mainstream provision that puts children and young people first; and the need to create a system that is financially sustainable and built for long-term success (Department for Education [DFE], 2022, p. 5).

However, this is not just about persistent policy failure over SEN/disability, it can be seen to also illustrate the democratic deficits in general educational and general social policy-making processes. SEN/disability inclusion cannot be detached from these other systems within the wider education system, such as school accountability, curriculum focus, and design, behavior management etc., because of their strong inter-connections. This is where Crouch's (2011) Post-Democracy analysis is relevant in identifying how policy-making could better reflect stakeholder's perspectives. This also connects to Felder's (2018) examination of the meaning of inclusion, as encompassing communal and societal aspects and as being inherently social in its links to social intentions and actions. Felder goes onto to argue that the inclusion in inclusive education involves all stakeholders at all levels, from individuals to structural levels.

The implication of this analysis is that there needs to be more public deliberation and choice about inclusive education and a better balance between personal preferences and public choice. Following this argument Norwich (2019) has argued for an Educational Framework Commission, as a non-governmental policy initiative that uses representative citizen assemblies and other approaches to seek informed common ground between different stakeholders in policy making. This is one way to consider what is involved in a thick concept of inclusion in its links to democracy and as setting the context for research into inclusive education.

Conclusion

Several conclusions can be drawn from the above analysis about the scope, reach and limits of research on inclusive education. First, inclusive education is multi-dimensional, ambiguous and normative. This is related to the discussion about using inclusion as a thick or thin concept. The thick—thin distinction has been associated with the philosopher Williams (1985) in relation to ethical evaluations. Both thin and thick concepts involve evaluations, but thick concepts also have more complexity and descriptive content, while with thin concepts there is little sense of what is evaluated positively or negatively. In the case of inclusive education, the characteristic qualified by the term inclusive is positive without knowing much about the characteristic. For example, describing some education practice as "inclusive" reflects a thin use of the term, while qualifying the term "inclusive" as in "societal inclusion" or "curriculum inclusion in a separate setting" reflects more content and veers toward a thicker use of the concept. Kirchin (2013) has suggested that this thin-thick distinction is better represented as a continuum from thin to thick, which fits the use of the term "inclusive," in these three examples, "inclusive practice," "societal inclusion" to "curriculum inclusion in a separate setting."

What makes inclusion in inclusive education a thick term is its multi-dimensionality which can also engender value tensions that need to be resolved. As argued above, this requires value clarification and some settlement about the balance of values, which is where deliberative democratic principles and processes have a crucial role. However, these processes can be Informed by empirical research, such as those summarized above. So, the answer in this paper to the question about the scope, reach and limits of research in inclusive education is that such research involves both empirical, methodological and evaluative matters. Educational research about inclusive education is not just empirical, it also involves value and norm clarification, a process which has been too often ignored. However, some empirical research in the field, such as the effects type summarized above, requires thin concepts of inclusion, as this is the only way that systematic empirical metrics can be set up for the kinds of large scale linking of variables. So, there is a place for both thin and thick concepts of inclusion in which they can interact. Thick concepts of inclusion can inform the foci for empirical research, while thin concepts used in empirical conclusions can inform how thick concepts develop through deliberative processes.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

Agran, M., Jackson, L., Kurth, J. A., Ryndak, D., Burnette, K., Jameson, M., et al. (2020). Why aren't students with severe disabilities being placed in general education classrooms: examining the relations among classroom placement, learner outcomes, and other factors. *Res. Pract. Pers. Sev. Disabil.* 45, 4–13. doi: 10.1177/1540796919878134

AuCoin, A., Porter, G. L., and BakerKorotkov, K. (2020). New Brunswick's journey to inclusive education. *Prospects* 49, 313–328. doi: 10.1007/s11125-020-09508-8

Baumgart, D., Brown, L., Pumpian, I., Nisbet, J., Ford, A., Sweet, M., et al. (1982). Principle of Partial Participation and Individualized Adaptations in Educational Programs for Severely Handicapped Students. *Psychol. Res. Pract. Pers. Sev. Disabil.* 7, 17–26.

Booth, T., and Ainscow, M. (2011). *Index for Inclusion: Developing Learning and Participation in Schools. 3rd ed.* Bristol: CSIE.

Cigman, R. (2007). A Question of Universality: inclusive Education and the Principle of Respect. *J. Philos. Educ.* 41, 775–793.

Crouch, C. (2011). *The Strange Non-death of Neo-liberalism*. London: John Wiley & Sons.

Dalkilic, M., and Vadeboncoeur, J. A. (2016). Re-framing inclusive education through the capability approach: an elaboration of the model of relational inclusion. *Glob. Educ. Rev.* 3, 122–137.

Department for Education [DFE] (2011). *Support and Aspiration: A new Approach to Special Educational needs and Disability*. Available online at: https://www.gov.uk/government/publications/support-and-aspiration-a-new-approach-to-special-educational-needs-and-disability-consultation (accessed July 6, 2022).

Department for Education [DFE] (2022). *SEND Review: Right Support, Right Place, Right Time Government Consultation on the SEND and Alternative Provision System in England*. London: DFE.

Dyssegaard, C. B., and Larsen, M. S. (2013). *Evidence on Inclusion*. Aarhus: Aarhus University.

Education Wales (2020). *Routes for Learning: Guidance document*. Available online at: https://hwb.gov.wales/api/storage/f4133444-0b1d-4f66-aa46-8f76edd09199/curriculum-2022-routes-for-learning-guidance-final-web-ready-e-130720.pdf (accessed July 6, 2022).

Felder, F. (2018). The value of Inclusion. *J. Philos. Educ.* 52, 54–70. doi: 10.1111/1467-9752.12280

Fletcher, J. (2010). Spillover Effects of Inclusion of Classmates with Emotional Problems on Test Scores in Early Elementary School. *J. Policy Anal. Manag.* 29, 69–83. doi: 10.1002/pam.20479

Fuchs, D., and Fuchs, L. S. (1998). Competing Visions for Educating Students with Disabilities Inclusion versus Full Inclusion. *Child. Educ.* 74, 309–316. doi: 10.1080/00094056.1998.10521956

Gee, K., Gonzalez, M., and Cooper, C. (2020). Outcomes of Inclusive Versus Separate Placements: A Matched Pairs Comparison Study. *Res. Pract. Pers. Sev. Disabil.* 45, 223–240. doi: 10.1177/1540796920943469

Gottfried, M. A., and Harven, A. (2015). The Effect of Having Classmates with Emotional and Behavioral Disorders and the Protective Nature of Peer Gender. *J. Educ. Res.* 108, 45–61. doi: 10.1080/00220671.2013.836468

Gray, P., Norwich, B., and Webster, R. (2020). *Review of Research about the Effects of Inclusive Education: (longer version)*. Available online at: https://senpolicyresearchforum.co.uk/wp-content/uploads/Inclusion-Review-final-longer-Feb-21.pdf (accessed July 6, 2022).

Hehir, T., Grindal, T., Freeman, B., Lamoreau, R., Borquaye, Y., and Burke, S. (2016). *A Summary of The Evidence on Inclusive Education*. Cambridge: Harvard Graduate School of Education.

Kauffman, J. M., Ahrbeck, B., Anastasiou, D., Badar, J., Felder, M., and Hallenbeck, B. A. (2021). Special Education Policy Prospects: Lessons From Social Policies Past. *Exceptionality* 29, 16–28. doi: 10.1080/09362835.2020.1727326

Kirchin, S. (2013). *Thick Concepts*. Oxford: Oxford University Press, 9780199672349.001.0001 doi: 10.1093/acprof:oso/9780199672349.001.0001

Lehane, T. (2017). "SEN's completely different now": critical discourse analysis of three "Codes of Practice for Special Educational Needs" (1994, 2001, 2015). *Educ. Rev.* 69, 51–67. doi: 10.1080/00131911.2016.1237478

National Council for Special Education [NCSE] (2019). *Policy Advice on Special Schools and Classes An Inclusive Education for an Inclusive Society?*. Trim: NCSE.

Norwich, B. (2013). *Addressing Tensions and Dilemmas in Inclusive Education: living with Uncertainty*. London: Routledge. doi: 10.4324/9780203118436

Norwich, B. (2019). From the Warnock Report (1978) to an Education Framework Commission: A Novel Contemporary Approach to Educational Policy Making for Pupils With Special Educational Needs/Disabilities. *Front. Educ.* 4:72. doi: 10.3389/feduc.2019.00072

Oh-Young, C., and Filler, J. (2015). A meta-analysis of the effects of placement on academic and social skill outcome measures of students with disabilities. *Res. Dev. Disabil.* 47, 80–92. doi: 10.1016/j.ridd.2015.08.014

Porter, G. L., AuCoin, A., New Brunswick Department of Education Early Childhood Development (2012). *Strengthening Inclusion, Strengthening Schools Report of the Review of Inclusive Education Programs and Practices in New Brunswick Schools*. Fredericton, N.B: New Brunswick Dept of Education and Early Childhood Development.

Ruijs, N. M., and Peetsma, T. T. D. (2009). Effects of inclusion on students with and without special educational needs reviewed. *Educ. Res. Rev.* 4, 67–79. doi: 10.1016/j.edurev.2009.02.002

Runswick-Cole, K. (2011). Time to end the bias towards inclusive education? *Br. J. Spec. Educ.* 38, 113–119. doi: 10.1111/j.1467-8578.2011.00514.x

Satherley, D., and Norwich, B. (2021). Parents' experiences of choosing a special school for their children. *Eur. J. Spec. Needs Educ.* 1–15. doi: 10.1080/08856257.2021.1967298

Sen, A. (1979). "Equality of What?," in *Tanner Lectures on Human Values*, ed. S. McMurrin (Cambridge: Cambridge University Press).

Sen, A. (2017). *Collective Choice and Social Welfare: An Expanded Edition*. London: Penguin. doi: 10.4159/9780674974616

Sermier Dessemontet, R., Bless, G., and Morin, D. (2012). Effects of inclusion on the academic achievement and adaptive behaviour of children with intellectual disabilities. *J. Intellect. Disabil.* 56, 579–587. doi: 10.1111/j.1365-2788.2011.01497.x

Slee, R. (2018). *Inclusive Education isn't Dead, it Just Smells Funny*. London: Routledge. doi: 10.4324/9780429486869

Slee, R., and Weiner, G. (2001). Education Reform and Reconstruction as a Challenge to Research Genres: Reconsidering School Effectiveness Research and Inclusive Schooling. *Sch. Eff. Sch. Improv.* 12, 83–98. doi: 10.1076/sesi.12.1.83.3463

Szumski, G., Smogorzewska, J., and Karwowski, M. (2017). Academic Achievement of Students Without Special Educational needs in Inclusive Classrooms: A Meta-Analysis. *Educ. Res. Rev.* 21, 33–54. doi: 10.1016/j.edurev.2017.02.004

Terzi, L. (2014). Reframing Inclusive Education: Educational Equality as Capability Equality. *Camb. J. Educ.* 44, 479–493. doi: 10.1080/0305764X.2014.960911

UN (2006). *Convention of the Rights of People with Disabilities*, 24. Available online at: https://www.ohchr.org/EN/HRBodies/CRPD/Pages/ConventionRightsPersonsWithDisabilities.aspx#24 (accessed November 25, 2021).

UNCRPD (2016). *Committee on the Rights of Persons with Disabilities: n Article 24: Right to inclusive education General comment No. 4 (2016)*. Available online at: https://www.ohchr.org/Documents/HRBodies/CRPD/GC/RighttoEducation/CRPD-C-GC-4.doc (accessed November 29, 2021).

UNICEF (2017). *Inclusive Education: Understanding Article 24 of the Convention on the Rights of Persons with Disabilities*. Available online at: https://www.unicef.org/eca/sites/unicef.org.eca/files/IE_summary_accessible_220917_0.pdf (accessed July 6, 2022).

Warnock, M. (2005). *Special Educational Needs: A New Look*. London: Philosophy of Education Society of Great Britain.

Wason, P. C. (1960). On the failure to eliminate hypotheses in a conceptual task. *Q. J. Exp. Physiol.* 12, 129–140. doi: 10.1080/17470216008416717

Williams, B. (1985). *Ethics and the Limits of Philosophy*. London: Fontana.

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The trajectory of inclusive beliefs in beginning teachers

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Inclusive education is supported by the belief that all students belong and are valued members of their neighborhood school communities. Teachers must possess beliefs that support inclusion before they are able to develop the knowledge and skills necessary to implement effective inclusive practice. Using The *Beliefs About Learning and Teaching Questionnaire (BLTQ)*, 396 participants were followed for 4 years, from their initial year in preservice teacher education through to their second year of teaching to determine the trajectory of the development of inclusive beliefs. Distinct groups were identified. Those who began with lower inclusive beliefs that tended to decrease over time were more likely to be male. Those who began with higher inclusive beliefs that remained stable were more likely to be in the elementary panel and have greater professional experience. In addition, those with higher inclusive beliefs were more likely to have greater personal experience and weeks on practicum when they began their first course in inclusive education. Results are discussed with respect to teacher education for inclusive education.

KEYWORDS

inclusive education, beliefs, beginning teachers, pre-service teachers, teacher education

Introduction

Inclusive education is supported by the belief that all students belong and are valued members of their neighborhood school communities (Porter and Towell, 2017). Systematic reviews of the research in inclusive education (e.g., Hehir et al., 2016) indicate that inclusive education offers positive benefits academically and socially for all children. Teachers play an essential role in implementing effective inclusive education; however, they often report significant barriers (Sokal and Katz, 2015). For example, Canadian teachers commonly perceive a lack of resources and report feeling that their training did not provide them with the skills needed to teach in inclusive classrooms (Sharma et al., 2007; McCrimmon, 2015; Sokal and Katz, 2015). As schools become more diverse, the need to graduate teachers that believe they are capable and competent educators is

paramount. Sharma (2018) presents the 3H Framework as a way to prepare teachers to be effective inclusive educators.

The 3H Framework (Sharma, 2018) states that preparing teachers for inclusive education must involve the development of beliefs, knowledge and skills, and practical application. These are referred to as the heart, head, and hands of inclusive education, and all three must work together for successful inclusion. Beliefs form the heart of inclusion and provide the foundation upon which the head and hands will flourish. Based on this framework, teachers must possess beliefs that support inclusion before they are able to develop the knowledge and practical skills necessary to be effective inclusive educators.

Belief is a complex construct that exists at the core of all people, guiding attention, information processing, decision making, and behavior (Kagan, 1992; Fives and Buehl, 2012). A belief is something that has specific meaning, is concrete, can be communicated in words, and is assumed to be true (Connors and Halligan, 2015). A person's assumption that their beliefs represent an objective truth allows them to evaluate and understand their world and subsequently make decisions. Beliefs create consistency for people (Connors and Halligan, 2015). In the way that a compass helps people find direction and navigate unfamiliar spaces, beliefs provide the context in which a person can understand their world (Kagan, 1992; Pajares, 1992; Fives and Buehl, 2012).

Perhaps one of the most significant features of beliefs is the role they play in people's actions and behaviors. Beliefs are generally stable, which is significant because people can use them to evaluate information and make decisions. This process ultimately leads to reliable and predictable patterns of behavior (Funkhouser, 2017). The function of beliefs is especially important when people encounter unfamiliar or ambiguous situations because it provides the intuition or instinct that people rely on to make sense of the situation (Pajares, 1992).

Unlike facts or knowledge, beliefs typically do not arise from formal teaching and learning. Instead, the development of beliefs is grounded in experience and the informal process of observing, imitating, and participating in life and culture (Pajares, 1992). This process occurs effortlessly, and people often acquire beliefs without even realizing that it is happening. The earliest beliefs that people develop are called core beliefs, and they are generally the most stable and resistant to change (Wyer and Albarracín, 2005). As people acquire more beliefs, they begin to form a network that branches out from the core beliefs (Kagan, 1992; Pajares, 1992). While beliefs originate with little-to-no effort on the part of the individual, the process of adjusting or changing pre-existing beliefs is much more difficult, and newly acquired information that contradicts a pre-existing belief is easily dismissed (Jordan and Stanovich, 2004).

As more beliefs get added to the network, they become more nuanced and content specific. Beliefs about teaching and learning are an example of specific beliefs that exist within a broader network of beliefs. For teachers, these beliefs serve as a unique lens through which they understand elements of the classroom (e.g., student characteristics and instructional tasks). A teacher's unique understanding of classroom elements influences the decisions they make about instructional practices and interactions with students, which in turn has an influence on student outcomes (Kagan, 1992; Jordan and Stanovich, 2004).

Teachers' beliefs are especially important for students identified with diverse learning needs and inclusive education. When teachers possess beliefs that support inclusive education, they are more likely to feel responsible for meeting the learning needs of students with disabilities and will invest more effort to do so (Daniels et al., 2016; Jordan, 2018). These teachers also tend to value the learning process, are less concerned about students meeting rigid standards, and prefer that students receive specialized support within the regular classroom as opposed to being pulled out for instruction (Jordan and Stanovich, 2004; Silverman, 2007; Glenn, 2018). Without inclusive beliefs, teachers are likely to abandon inclusive practices in the face of challenges (MacCormack et al., 2021).

Inclusive teachers have a particular set of beliefs related to teaching and learning (Jordan, 2018). They tend to believe that challenges associated with disability are the result of the student's interaction with the environment and associated expectations. Not surprisingly, these beliefs are related to teachers' preferred practices in the classroom. Inclusive teachers work with students in small groups and provide individual instruction more often than less inclusive teachers; specifically working with academically at-risk students more than less inclusive teachers. Their instruction is more cognitively engaging and leads to better outcomes for all students.

Jordan and colleagues used extensive interviews and classroom observations to assess these qualities, and developed the Beliefs About Teaching and Learning Questionnaire (BLTQ) as a result of this work. The BLTQ is a 20-item self-report measure that collects information about the teacher's view of their role in the classroom, the goal of teaching and learning, as well as beliefs about ability. The items of the BLTQ are represented by four subscales: Teacher-Controlled Instruction, Entity-Increment, Student-Centred Instruction, and Attaining Standards (Glenn, 2018).

The Teacher-Controlled Instruction subscale reflects beliefs that are considered "traditional" and less inclusive. A high score on this factor represents the idea that teachers control what and how students learn. The Student-Centred Instruction subscale reflects beliefs that teachers should provide students with choice and flexibility in their learning while providing guidance and support. Teachers who endorse beliefs that instruction should be student-centered tend to be more inclusive (Glenn, 2018). The Entity-Increment subscale reflects teachers' beliefs about ability. A low score on this subscale represents entity beliefs, meaning that ability is viewed as a fixed and stable trait. A high score on this subscale represents increment beliefs, which refers

to the notion that ability is fluid, evolving, and responsive to instruction. Teachers with entity beliefs about ability are typically less inclusive, and teachers with incremental beliefs about ability are more inclusive (Jordan et al., 2010; Glenn, 2018). Finally, the Attaining Standards subscale reflects the belief that correct results are a valued part of education and getting good grades is what motivates students to work hard and do well in school. High scores on the Attaining Standards subscale of the BLTQ are associated with less inclusive beliefs and practices (Glenn, 2018).

Fostering inclusive beliefs is thus an essential part of teacher education, however it tends to get overlooked and we know less about developing inclusive beliefs than we do about knowledge, skills, and practical application. Past research has examined changes in beliefs about learning and teaching over short periods of time (e.g., before and after a specific course or practicum experience) and has identified a combination of personal and professional experiences that contribute to the development of beliefs (Lanterman and Applequist, 2018; Delorey et al., 2020). The current study expands on this literature by examining the development of these beliefs from the beginning of teacher education through to the first 2 years of teaching. Our research asks the following question: are there trajectories of inclusive beliefs that can be tracked in beginning teachers? Given that such trajectories exist, we also ask if there are differences between the groups on characteristics that have been shown to differentiate more and less inclusive beliefs in past research (i.e., gender, grade level taught, experiences with people with diverse needs, and time spent teaching students with diverse needs). By determining the ways in which beliefs develop, we can begin to understand how to influence those within initial teacher education resulting in more inclusive teaching and better student outcomes.

Materials and methods

Participants

Participants were recruited at the beginning of their teacher education programs during their first course on inclusive education. Initially, 2,187 participants from faculties of education across Canada agreed to participate, but only 396 people from 11 faculties of education agreed to be followed for the longitudinal portion of the study. The resulting longitudinal sample consisted of 80% female teachers and 60% indicated an intent to teach in the elementary stream. With respect to experience with people with diverse learning needs at the beginning of their program, 42% identified having little or no personal experience and 46% identified as having little or no professional experience. The average number of weeks spent in practicum was 1.59 (*SD* 2.35). With attrition, by year 4, 164 participants remained with 81% female and 59% teaching in the elementary system. With respect to initial responses of experience and weeks on practicum, 45% indicated little or no personal experience with people with diverse learning needs, 43% indicated little or no professional experience, and the average number of weeks spent in practicums was 1.62 (*SD* 2.11). To assess attrition bias (see **Supplementary Tables 1, 2**), Year 1 characteristics of participants who did and did not indicate interest in participating longitudinally were compared using the following effect sizes: Cohen's d (for continuous variables), Phi (φ; for binary variables) or and Cramer's V (for ordinal variables). Similarly, we compared the Year 1 characteristics of those who completed Year 4 and those who did not. Effect sizes were interpreted as small effect (d = 0.20; φ = 0.10; V = 0.06), moderate effect (d = 0.50; φ = 0.30; V = 0.17), and large effect (d = 0.80; φ = 0.50; V = 0.29). All effect sizes were small or negligible.

Measures

The (*BLTQ*; Glenn, 2018) assesses teachers' beliefs about their own roles and responsibilities for inclusive practice. It consists of four subscales and a total of 20 questions, rated on a 6-point Likert-scale (1 = *strongly disagree* to 6 = *strongly agree*). The Student-Centred Instruction subscale measures the extent to which teachers believe that students' needs within the learning process are the focus of instructional decision making in the classroom (e.g., Good instruction relates learning material to things students are interested in outside of school; Good teachers give students choices in their learning tasks). The Attaining Standards subscale measures the extent to which teachers believe that the primary motivator for learning are external rewards, such as high grades (e.g., All of my students would do well if they worked hard; The more students are concerned about grades and performance, the more they learn). The Teacher-Controlled Instruction subscale measures the extent to which teachers believe that their primary role is transmitting information (e.g., It is important for students to complete assignments exactly as the teacher planned; It is important for teachers, not students, to direct the flow of a lesson). The Entity-Increment subscale indicates the extent to which teachers believe that students' learning ability is more stable and fixed, rather than highly responsive and reflective of instructional contexts (Note: these items are reverse coded. e.g., The ability to learn is something people have a certain amount of and there isn't much they can do to change it; There will always be some students who simply won't "get it" no matter what I do). High scores on the Student-Centred Instruction and Entity-Increment scales and low scores on Teacher Controlled Instruction and Attaining Standards scales are indicative of beliefs consistent with inclusive education. Cronbach alphas for each scale ranged from0.62 to 0.65.

In addition to the BLTQ (Glenn, 2018), participants indicated their age, gender, the grades they were intending to teach (elementary or secondary). Participants also were asked about their personal and professional learning experience with individuals who have been identified with diverse learning needs on a 4-point scale (0 = *none*, 1 = *little*, 2 = *moderate*, 3 = *extensive*), and the number of weeks to date that that they had spent in a teaching practicum.

Procedure

Ethical approval was obtained from each of the University Research Ethics Boards participating in the study. All procedures followed ethical principles for research with human participants. Participants first completed a pen-and-paper copy of the demographic questionnaire and the BLTQ which were distributed in-class during their first course on inclusion in their teacher education programs. This course was either in the first or second term of the 4-term program. Participation in this study was not mandatory and did not have an impact on any outcomes of the course. Their instructors were unaware of their participation. Participants indicated if they wished to continue participating in the study on a separate sheet stapled to the package of questionnaires. If they consented to be contacted for future studies, a unique anonymous ID number was assigned to their data and the results of their surveys were input into a database. Participants who indicated an interest to continue were sent an online version of the BLTQ at three additional time points after their first survey which was completed in year 1 of the program. Year 2 was 1 year after their initial survey and corresponds to near the end of their initial teacher education program. Year 3 was 2 years after the initial survey and corresponded to their first year of teaching. Year 4 was 3 years after their initial survey and corresponded to their second year of teaching.

Analyses

Analyses were conducted using SAS 9.4 (SAS Institute Inc., Cary, NC, United States). Means and standard deviations (SD) were used to describe continuous variables, and proportions and percentages were used to describe categorical variables.

The trajectories of Teacher Controlled Instruction, Entity Increment, Student Centred Instruction, and Attaining Standards, over time were jointly estimated using multigroup latent class growth models (Nagin et al., 2018) with the Proc Traj macro (Jones et al., 2001). This approach aims to identify unique subgroups of participants that share similar trajectories across multiple outcomes. A censored normal model was used, with parameters estimated using the maximum-likelihood approach with the assumption that data were missing at random. A probability of belonging to each group is assigned to each participant, and the participant is assigned to a group based on the highest probability value. Following established guidelines (Jones et al., 2001; Nagin, 2005; Nagin et al., 2018), we first estimated a trajectory model for each outcome separately, starting with quadratic trajectories for one group, and adding additional groups until the model worsened. The number of trajectory groups was guided by overall model fit as assessed by the Bayesian Information Criterion (BIC), average posterior probability, odds of correct classification, and the proportion of individuals in each group. Next, non-significant quadratic terms were removed for model parsimony. Results were consistent when a different set of start values were used. Once the optimal model for each outcome was identified, outcomes were jointly modeled (Nagin et al., 2018).

Once the trajectories were finalized, characteristics of the participants in each trajectory group were compared. Analysis of variance and *post hoc* Tukey correction was used for continuous variables, and chi-square test was used for categorical data. Multinomial logistic regression was used to identify independent factors associated with each trajectory group. Listwise deletion was used for missing data, as only 7% of the sample (n = 28) were missing data on the variables of interest. Personal and professional experience were treated as continuous variables to obtain a more parsimonious model.

Results

Trajectories of beliefs

Sample size, mean, and standard deviation of each subscale on the BLTQ at each time point are presented in **Table 1**. The four subscales of the BLTQ were best modeled using three groups, whose trajectory is shown in **Figure 1** and model parameters are described in **Table 2**. **Supplementary Figure 1** additionally shows the trajectory of each participant, and **Supplementary Tables 3, 4** provide the details of the model fit and scores at each time point, respectively.

Group 1 was composed of 14% of the sample and was qualitatively labeled "higher in inclusive beliefs" given their relatively low scores on Teacher Controlled Instruction and Attaining Standards, and relatively high scores on Entity Increment and Student-Centered Instruction. Group 1 scored similarly across the 4 years for all domains. The opposite pattern was observed for Group 2, which was composed of 26% of the sample and qualitatively labeled "lower in inclusive beliefs" given their relatively high scores on Teacher Controlled Instruction and Attaining Standards, and relatively low scores on Entity Increment and Student Centred Instruction. Group 2 showed significant, though modest, declines in Entity Increment and an increase in Attaining Standards; scores on Teacher Controlled Instruction and Student Centred Instruction remained stable over the 4 years. Lastly, Group 3 was composed of 60% of the sample and was qualitatively labeled

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TABLE 1 Sample size, mean, and standard deviation (SD) at each time point.

	Teacher controlled		Entity increment		Student centred		Attain standards	
	n	Mean (*SD*)	*n*	Mean (*SD*)	*n*	Mean (*SD*)	*n*	Mean (*SD*)
Year 1	378	2.97 (0.67)	389	5.28 (0.66)	390	4.75 (0.55)	392	2.8 (0.8)
Year 2	268	2.88 (0.62)	272	5.24 (0.69)	266	4.87 (0.58)	267	2.87 (0.8)
Year 3	124	2.95 (0.67)	124	5.1 (0.74)	123	4.79 (0.61)	126	2.92 (0.85)
Year 4	163	3.12 (0.65)	160	5.08 (0.71)	160	4.78 (0.47)	163	3.19 (0.78)

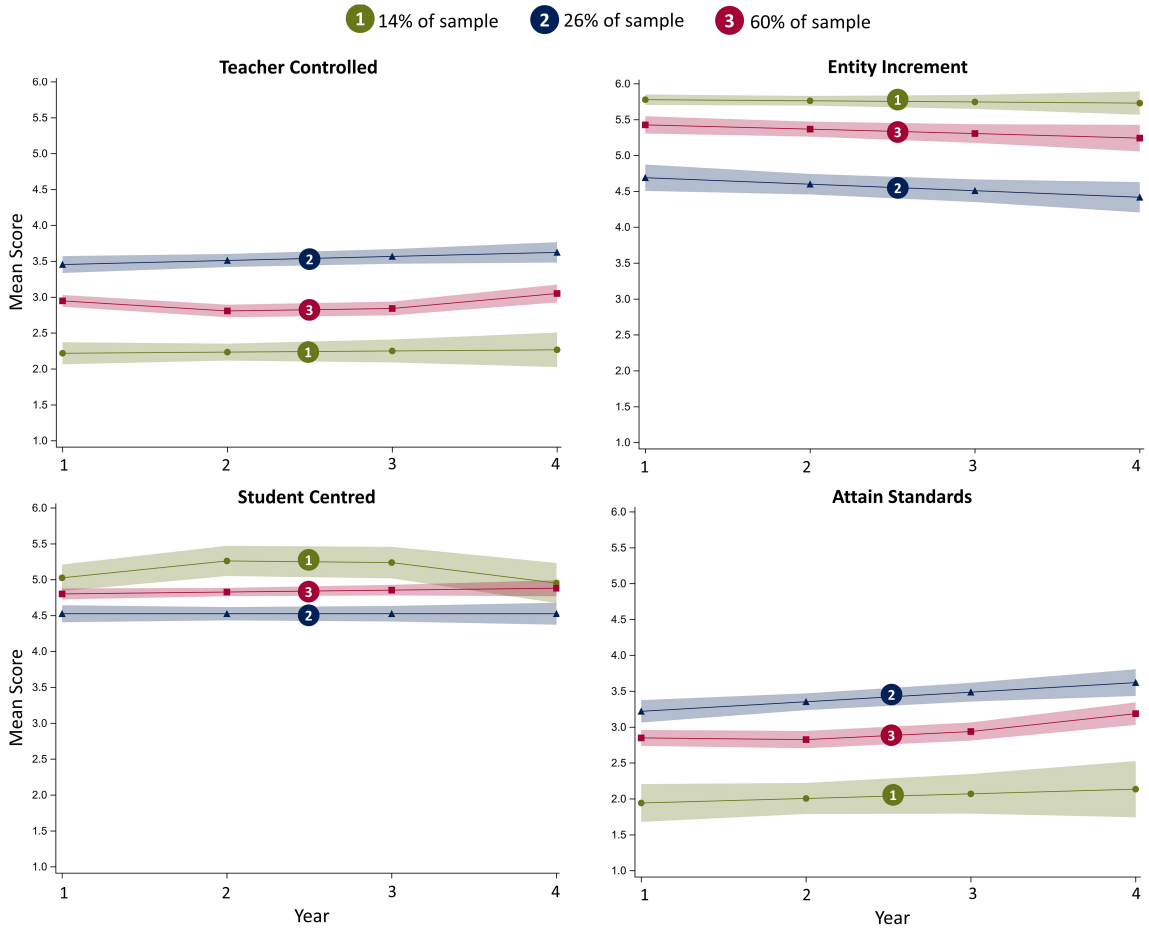

FIGURE 1
Mean trajectory of each beliefs domain over time. Band around each trajectory represents the 95% confidence interval.

"intermediate inclusive beliefs" given that they scored in the intermediate range (relative to Groups 1 and 2), and scored similarly across the 4 years.

Characteristics associated with each trajectory

Table 3 summarizes the Year 1 characteristics of participants in each trajectory group. Relative to all other groups, participants in Group 2 (lower in inclusive beliefs) were more likely to be male, and those in Group 1 (higher in inclusive beliefs) were more likely to be in the elementary panel and have more professional experience. In addition, those in Group 1 (higher in inclusive beliefs) were more likely to have more personal experience and weeks on practicum, relative to Group 2. Using a multivariable model to control for the effects of other variables yielded similar results (Table 4). The odds of being in Groups 1 and 3 (relative to Group 2) were 2.86 (95% CI 1.03, 7.91) and 2.18 (95% CI 1.23, 3.86) times higher for

TABLE 2 Estimates of beliefs trajectory parameters.

		Teacher controlled		Entity increment		Student centred		Attain standards	
Group	**Parameter**	**β (*SE*)**	***P-value***	**β (*SE*)**	***P-value***	**β (*SE*)**	***P-value***	**β (*SE*)**	***P-value***
1	Intercept	2.22 (0.07)	<0.001	5.78 (0.11)	<0.001	5.03 (0.08)	<0.001	1.91 (0.10)	<0.001
	Linear	0.02 (0.05)	0.74	−0.04 (0.07)	0.62	0.39 (0.15)	0.010	0.07 (0.06)	0.26
	Quadratic	–	–	–	–	−0.14 (0.05)	0.007	–	–
2	Intercept	3.45 (0.06)	<0.001	4.70 (0.08)	<0.001	4.53 (0.06)	<0.001	3.22 (0.08)	<0.001
	Linear	0.06 (0.03)	0.07	−0.09 (0.04)	0.023	0.00	0.99	0.13 (0.04)	0.002
	Quadratic	–	–	–	–	–	–	–	–
3	Intercept	2.95 (0.04)	<0.001	5.52 (0.05)	<0.001	4.80 (0.03)	<0.001	2.85 (0.05)	<0.001
	Linear	−0.23 (0.07)	0.002	−0.08 (0.03)	0.007	0.03 (0.02)	0.22	−0.09 (0.10)	0.34
	Quadratic	0.09 (0.02)	<0.001	–	–	–	–	0.07 (0.03)	0.036

SE, Standard error.

TABLE 3 Characteristics in Year 1 of participants in each trajectory group.

	Group 1 (*n* = 55)	**Group 2 (*n* = 103)**	**Group 3 (*n* = 238)**	**F/χ^2 (*p*-value)**	**Contrast[b]**
Sex, *n* female[a]	49 (89%)	70 (68%)	197 (83%)	13.02 (0.002)	1.3>2
Panel, *n* elementary	43 (78%)	51 (50%)	145 (61%)	12.40 (0.002)	1>2.3
Personal experience				3.36 (0.036)	1>2
None	3 (5%)	5 (5%)	13 (5%)		
Little	13 (24%)	47 (46%)	84 (35%)		
Moderate	24 (44%)	35 (35%)	100 (42%)		
Extensive	15 (27%)	14 (14%)	40 (17%)		
Professional experience				5.61 (0.004)	1>2.3
None	1 (2%)	8 (8%)	15 (6%)		
Little	14 (25%)	47 (46%)	95 (40%)		
Moderate	29 (53%)	36 (35%)	102 (43%)		
Extensive	11 (20%)	11 (11%)	25 (11%)		
Weeks on practicum	2.35 (2.55)	1.33 (2.19)	1.53 (2.34)	3.59 (0.029)	1>2

Mean (Standard Deviation) or n (%) are presented.
[a]Two students (in Group 2 and 3) reported Trans or Other, and we removed from this comparison.
[b]Denotes significant pairwise contrasts (at $p < 0.05$), e.g., 2.3 > 1 indicates that Group 2 and 3 are significantly larger (or have higher scores) than Group 1.

females. Additionally, the odds of being in Group 1 (relative to Group 2) were 2.49 (95% CI 1.13, 5.50) times higher for the elementary panel. Lastly, the odds of being in Group 1 were 1.15 (95% CI 1.00, 1.31) and 1.11 (95% CI 1.00, 1.25) times higher for each week in practicum relative to Group 2 and 3, respectively.

Discussion

The results of this study show that most people entering the faculty of education endorse inclusive beliefs about learning and teaching, and importantly, these remain stable throughout their program and first few years of teaching. This is not too surprising perhaps given that beliefs are difficult to change. What is perhaps more concerning is that about one-quarter of the future teachers are not as inclusive and become less so as they move through their teacher education programs and in to the first 2 years of teaching.

In response to our research question about trajectories, the analysis indicated three trajectories of development of inclusive beliefs from the beginning of teacher education through to the end of the second year of teaching. Group 1 began their teacher education program with high inclusive beliefs and those remained fairly stable over the subsequent 4 years. They comprised the smallest group of participants; only 14%. This group already had the beliefs that teaching and learning is student rather than teacher centered, and that the measure of learning is not necessarily determined by the mark received. They see ability as something that is malleable and over which they have the ability to increase in students. Jordan (2018) summarizes decades of her research that supports these beliefs as being indicative of effective teachers in inclusive classrooms. Group 2 comprised 26% of the participants and showed the opposite trajectory of belief developments. This group began

TABLE 4 Odds of belonging to each trajectory group. Odds Ratio (OR) and 95% Confidence intervals are presented.

	P-value of overall effect	Group 1 (ref = group 2)	Group 3 (ref = group 2)	Group 1 (ref = group 3)
Female	0.015	**2.86 (1.03, 7.91)**	**2.18 (1.23, 3.86)**	1.31 (0.50, 3.49)
Elementary panel	0.08	**2.49 (1.13, 5.50)**	1.24 (0.75, 2.04)	2.01 (0.98, 4.13)
Personal experience	0.44	1.34 (0.84, 2.13)	1.16 (0.84, 1.61)	1.15 (0.76, 1.73)
Professional experience	0.14	1.58 (0.96, 2.61)	1.03 (0.73, 1.44)	1.54 (0.99, 2.40)
Weeks on practicum	0.10	**1.15 (1.00, 1.31)**	1.03 (0.92, 1.15)	**1.11 (1.00, 1.25)**

Bolded term highlights significant ($p < .05$) values.

the teacher education program with relatively less inclusive beliefs compared to the other two groups. Relative to the other groups, they tended to believe that teachers ought to control the learning and that marks were the measure of learning that was important. Their belief about teacher control remained stable and their belief about marks as indicative of learning increased. They tended to come into their initial teacher education with less student centered learning ideas. They saw ability as more of a fixed trait and that belief seemed to be more entrenched at the end of their first 2 years of teaching. We know that these early years are key to forming their practice (Schuck et al., 2018) and if their beliefs are becoming less inclusive, it is likely that so too is their instruction (Jordan, 2018). That is a great concern given that schools are becoming more diverse. The question might be whether there is a possible way to address these less inclusive beliefs and help them become more, rather than less, inclusive. Delorey et al. (2020) asked preservice teachers at the end of their initial teacher education what experiences supported their development of inclusive beliefs. They found that practicum experiences were listed as the most important especially around the ability to witness inclusive education in practice and to collaborate with the staff in the schools. Personal and work experiences with diversity were also listed as important. Teacher candidates that identified themselves or others in their family as having been identified with diverse learning needs or working with children and adults who have disabilities were key in helping their beliefs. Their education program was also important. It would be important to determine what experiences contribute to beliefs in the first few years of teaching as has been done with preservice teachers. Perhaps positive experiences can support inclusive beliefs, but negative experiences are enough to make people with less inclusive beliefs become less inclined to buy in to that system. Future research investigating the experiences of people that start lower in inclusive beliefs would help shed light on this question. Finally, Group 3 was more moderate in their beliefs compared to the other two groups. They represented the largest group (60%) and when investigating their mean scores, they tended more toward inclusive beliefs that remain from the beginning of their teacher education to the end of the first 2 years of teaching.

Characteristics associated with each trajectory

In answering the research question about characteristics associated with each trajectory, a number of differences emerged between the groups. The beginning teachers in Group 2 who tended to have less inclusive beliefs were also more likely to be male and work in secondary. Specht and Metsala (2018) found that male secondary school preservice teachers that believed learning was more of a fixed trait tended to be less efficacious about their inclusive practice. Perhaps targeting men who plan to teach in secondary and determining ways to increase their inclusive beliefs would be a useful endeavor. At the very least, more research should look at this question.

An interesting finding is that those with more practicum experience early on were more likely to endorse inclusive beliefs. These people would have had some practicum experience before taking their first course in inclusive education. This finding is similar to that of Charles et al. (2022) who found that participants with a higher number of weeks on practicum experienced growth in self-efficacy for inclusive practice. Perhaps early experiences within teacher education are the ones that are important in forming beliefs, which may become more entrenched over time. Research should investigate further whether the placement of practicum within a teacher education program in relation to coursework in inclusive education can influence inclusive education practice.

Findings from the current study should also be considered in the context of its limitations. First, the trajectories identified represent an approximation of a more complex reality and are not necessarily distinct entities. Second, given the long-term follow-up of this study, attrition was inevitable. However, it is important to note that those lost to follow-up were similar to those who completed follow-up across a variety of characteristics at the initial survey, and the analyses utilized data from the full sample (not just those with complete data at each follow-up). Finally, the reliability analysis of the BLTQ indicates that potentially there are issues with internal consistency. The small number of questions in each subscale may be deflating the Cronbach alpha. Hair et al. (2010) state that while a value of 0.70 is generally agreed upon as an acceptable value, and values as low as 0.60 may be acceptable for exploratory research. Given

the strong and consistent factor structure that has been noted in previous research using this measure (Specht et al., 2016; Glenn, 2018), we believe it to be useful at this early stage of research on teachers beliefs about learning and teaching in inclusive classrooms.

Conclusion

This study is the first of its kind to investigate the trajectory of beliefs over the period of initial teacher education and in to the first few years of teaching. Our findings illustrate that there are distinct groups of people with respect to inclusive beliefs about learning and teaching. Those in elementary, and who are women have stable inclusive beliefs. Those who have more personal and professional experience when entering their initial teacher education program have the highest and stable scores across all 4 years. The main concern lies with those that came in with less inclusive beliefs which became more negative over the 4 years of the research. The question is whether they will continue to become more negative. A better understanding of the experiences of the groups and how those experiences contribute to inclusive beliefs may help us determine how to support our early career teachers in becoming the most effective teachers they can be for students in the diverse classrooms of today.

Data availability statement

The datasets presented in this article are not publicly available as it was not requested by the researcher in the letter of information. Requests to access the datasets should be directed to corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by Western University Non-medical Ethics Research Board. The patients/participants provided their written informed consent to participate in this study.

Author contributions

JS, JD, and KP worked collaboratively on developing the idea for the manuscript and in writing and editing various sections. JS wrote the first draft of the manuscript. KP performed the analyses. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

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References

Charles, E., Metsala, J., and Specht, J. (2022). *Gains in Pre-service Teacher Efficacy for Inclusive Education: Contributions of Initial Beliefs and Practicum Length. (Manuscript Sumbitted for Publication)*. London: Western University.

Connors, M. H., and Halligan, P. W. (2015). A cognitive account of belief: A tentative road map. *Front. Psychol.* 5:1588. doi: 10.3389/fpsyg.2014.01588

Daniels, L. M., Radil, A., and Wagner, A. K. (2016). Concordance between preservice teachers' personal responsibilities and intended instructional practices. *J. Exp. Educ.* 84, 529–553. doi: 10.1080/00220973.2015.1054333

Delorey, J., Specht, J., Fairbrother, M., Ismailos, L., Villella, M., Charles, E., et al. (2020). Experiences that shape pre-service teachers' inclusive practice beliefs. *Int. J. Incl. Educ.* doi: 10.1080/13603116.2020.1862403

Fives, H., and Buehl, M. M. (2012). "Spring cleaning for the "messy" construct of teachers' beliefs: What are they? Which have been examined? What can they tell us?," in *Educational Psychology Handbook: Vol. 2. Individual Differences and Cultural and Contextual Factors*, eds S. Harris, K. R. Graham, and T. Urdan (Washington, D.C: American Psychological Association), 471–499.

Funkhouser, E. (2017). Beliefs as signals: A new function for beliefs. *Philos. Psychol.* 30, 809–831. doi: 10.1080/09515089.2017.1291929

Glenn, C. (2018). The measurment of teacher's beliefs about ability: Development of the Beliefs About Learning and Teaching Questionnaire. *Except. Educ. Int.* 28, 51–66. doi: 10.5206/eei.v28i3.7771

Hair, J. F., Black, W. C., Babin, B. J., and Anderson, R. E. (2010). *Multivariate data analysis: Pearson College Division*. New York, NY: Pearson.

Hehir, T., Grindal, T., Freeman, B., Lamoreau, R., Borquaye, Y., and Burke, S. (2016). A summary of the evidence on inclusive education. Available online at: https://eric.ed.gov/?id=ED596134

Jones, B. L., Nagin, D. S., and Roeder, K. (2001). A SAS procedure based on mixture models for estimating developmental trajectories. *Sociol. Methods Res.* 29, 374–393. doi: 10.1177/0049124101029003005

Jordan, A. (2018). The supporting effective teaching project: 1. Factors influencing student success in inclusive elementary classrooms. *Except. Educ. Int.* 28, 10–27. doi: 10.5206/eei.v28i3.7769

Jordan, A., Glenn, C., and McGhie-Richmond, D. (2010). The supporting effective teaching (SET) project: The relationship of inclusive teaching practices to teachers' beliefs about disability and ability, and about their roles as teachers. *Teach. Teach. Educ.* 26, 259–266.

Jordan, A., and Stanovich, P. (2004). Teachers' personal epistemological beliefs about students with disabilities as indicators of effective teaching practices. *J. Res. Spec. Educ. Needs* 3, doi: 10.1111/j.1471-3802.2003.00184.x

Kagan, D. M. (1992). Implications of research on teacher belief. *Educ. Psychol.* 27, 65–90. doi: 10.1207/s15326985ep2701_6

Lanterman, C. S., and Applequist, K. (2018). Pre-service teachers' beliefs: Impact of training in Universal Design for Learning. *Except. Educ. Int.* 28, 102–121. doi: 10.5206/eei.v28i3.7774

MacCormack, J., Sider, S., Maich, K., and Specht, J. (2021). Self-determination and inclusion: The role of Canadian principals in catalyzing inclusive-positive practices. *Int. J. Educ. Pol. Leadersh.* 17, 1–16. doi: 10.22230/ijepl.2021v17n2a969

McCrimmon, A. W. (2015). Inclusive education in Canada: Issues in teacher preparation. *Interv. Sch. Clin.* 50, 234–237. doi: 10.1177/1053451214546402

Nagin, D. S. (2005). *Group-Based Modelling Of Development*. Cambridge: Harvard University Press. doi: 10.4159/9780674041318

Nagin, D. S., Jones, B. L., Passos, V. L., and Tremblay, R. E. (2018). Group-based multi-trajectory modeling. *Stat. Methods Med. Res.* 27, 2015–2023. doi: 10.1177/0962280216673085

Pajares, M. F. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Rev. Educ. Res.* 62, 307–332. doi: 10.3102/00346543062003307

Porter, G. L., and Towell, D. (2017). Advancing inclusive education: Keys to transformational change in public education systems. Available online at: https://inclusiveeducation.ca/wp-content/uploads/sites/3/2013/07/Porter-and-Towell-Advancing-IE-2017-Online-FINAL.pdf

Schuck, S., Aubusson, P., Buchanan, J., Varadharajan, M., and Burke, P. F. (2018). The experiences of early career teachers: New initiatives and old problems. *Prof. Dev. Educ.* 44, 209–221. doi: 10.1080/19415257.2016.1274268

Sharma, U. (2018). "Preparing to teach in inclusive classrooms," in *Oxford Research Encyclopedia of Education*, ed. G. W. Noblit (Oxford: Oxford University Press), 1–22. doi: 10.1093/acrefore/9780190264093.013.113

Sharma, U., Forlin, C., and Loreman, T. (2007). What concerns pre-service teachers about inclusive education: An international viewpoint? *KEDI J. Educ. Pol.* 4, 95–114.

Silverman, J. C. (2007). Epistemological beliefs and attitudes toward inclusion in pre-service teachers. *Teach. Educ. Spec. Educ.* 30, 42–51. doi: 10.1177/088840640703000105

Sokal, L., and Katz, J. (2015). Oh, Canada: Bridges and barriers to inclusion in Canadian schools. *Support Learn.* 30, 42–55. doi: 10.1111/1467-9604.12078

Specht, J., and Metsala, J. (2018). Predictors of teacher efficacy for inclusive practice in pre-service teachers. *Except. Educ. Int.* 28, 67–82. doi: 10.5206/eei.v28i3.7772

Specht, J., Mc-Ghie-Richmond, D., Loreman, T., Aylward, L., Bennett, S., Gallagher, T., et al. (2016). Preservice teachers' self-efficacy for teaching in inclusive classrooms: A cross Canada perspective. *Int. J. Incl. Educ.* 20, 1–15. doi: 10.1080/13603116.2015.1059501

Wyer, Jr, R. S, and Albarracín, D. (2005). "Belief formation, organization, and change: Cognitive and motivational influences," in *Handbook Of Attitudes And Attitude Change*, eds D. Albarracín, B. T. Johnson, and M. P. Zanna (Mahwah, NJ: Erlbaum), 273–322.

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Can research help to deliver the promises of inclusive education? The case of students with disabilities in the education marketplace

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In this paper, we engage with the question that frames this special issue: Can research help to deliver the promises of inclusive education? We argue that the answer is not so much a resounding and unquestionable "Yes!" but more of a "yes but. . ." it depends on what we consider and privilege as research evidence. Using the case of market-driven reforms and their impact on inclusive education for students with disabilities, we question the overemphasis on quantitative research as unbiased rationale for distributing economic and human resources, closing schools, and expanding private/public partnerships to deliver public education. We recommend that policy decision-making account for the history and geography of school districts and the intersectional forms of exclusion experienced by students and families, particularly those who experience interacting forms of oppression at the intersections of disability, race, and class.

KEYWORDS

disability, special education, educational polices, charter school, market-driven education

Introduction

In this paper, we engage with a question that seems to have an easy answer: Can research help to deliver the promises of inclusive education? Any educational researcher in their right mind and in preservation of their own job, will answer with a resounding yes! Though we agree with this quick answer, our enthusiasm is more cautious. We argue that the answer is not so much a resounding and unquestionable "Yes!" but more of a "yes but. . ." it depends on what we consider and privilege as research evidence.

Using the case of market-driven reforms in the city of Chicago and their impact on inclusive education for students with disabilities, we problematize the overemphasis

on quantitative research to make sweeping policy decisions. Such a form of decision-making has important consequences for inclusive education. We recommend that policy decision-making account for the history and geography of school districts and the intersectional forms of exclusion experienced by students and families, particularly those who experience interacting forms of oppression at the intersections of disability, race, and class.

This paper proceeds as follows: First, we define inclusive education and describe the promises of market-driven education reforms. Then, we challenge the ways research is utilized to implement such reforms. We conclude with recommendations for the use of research evidence to support an inclusive education agenda.

Defining inclusive education

Inclusive education emerged as a cluster of efforts to remediate inequities for minoritized students who were left out from accessing, participating, and benefiting from education. While inclusive education has been interpreted in different forms as it travels through cultural and geographical boundaries (Clough, 2000; Slee, 2005), there are some common features that have characterized it. Moving toward greater inclusivity demands the transformation of exclusionary school policies, practices, and culture; generating a place where all students can have a sense of belonging while learning together and experiencing positive educational outcomes (Ainscow et al., 2006).

Unfortunately, inclusive education efforts around the globe have become a "tale of selective inclusivity" (Waitoller, 2020a), in which students whose differences are "tolerable" are offered "inclusion," while those who experience intersecting forms of oppression (e.g., compounding racism, classism, ableism, genderism) or cannot conform to the ways "inclusion" is implemented are further marginalized. For instance, in the U.S, even though the overall rate of inclusion of students with disabilities in the general education classroom has increased, students with extensive support needs (e.g., students with severe disabilities) and Black and Latinx students with disabilities are more likely to receive educational services in separate classrooms than students with milder disabilities and White students with disabilities (Grindal et al., 2019; Kurth et al., 2019).

In the last decade, Waitoller and Artiles (2013), Waitoller and Kozleski (2013), and Waitoller and Annamma (2017) have fine-tuned a definition of inclusive education that encompasses major social justice principles and addresses intersecting forms of marginalization. Using Fraser's (2009) three-dimensions of justice and work on intersectionality (Crenshaw, 1992; Collins, 2000), we defined inclusive education as an ongoing struggle toward "(a) the redistribution of access to and participation in quality opportunities to learn (the economic dimension), (b) the recognition and valuing of all Students' differences as reflected in content, pedagogy, and assessment tools (the cultural dimension), and (c) the creation of more opportunities for non-dominant groups to advance claims of educational exclusion and their respective solutions (the political dimension)" (Waitoller and Artiles, 2013, p. 322). According to this definition, researchers, practitioners, policy makers, and activists need to attend closely to how injustices based on maldistribution, misrecognition, and misrepresentation based on one social marker (e.g., disability) interact with those of other social markers (e.g., race, ethnicity, immigration status).

Nevertheless, a core struggle of inclusive education efforts has been translating theory and research to practice and policy implementation. This is important considering that inclusive education efforts are implemented amid other larger policy initiatives. In such crowded policy contexts, inclusive education efforts are sometimes co-opted, backgrounded, or ignored (Waitoller and Thorius, 2015). A prominent group of education policies that have been adopted around the globe and affect inclusive education efforts are the so-called market-driven education policies.

Market-driven education reforms: The promises

Market-driven education reforms are a cluster of educational policies that rely on principles of capitalism to deliver public education services (Scott and Holme, 2016). Market-driven reforms have taken many shapes and forms according to national and cultural contexts where they are designed and enacted (Edwards and Means, 2019), sometimes implemented in pieces and sometimes as a whole package of reforms (Brenner and Theodore, 2002). Yet, despite such local interpretations, market-driven educational policies share some common assumptions. One of the primary assumptions of these policies is that parents act as rational, informed, and independent decision-makers who weigh different educational options and select the best school for their child. This hyper-individualization of school choices is supposed to increase the quality of schools and their competitiveness within a consumer-based market. Supporters of market-driven policies assert that, over time, this consumer behavior and competition among schools will increase access to quality schools for those students whom traditional public schools failed. To this end, schools will (1) seek to improve their quality to compete for students, and (2) schools that are of poor quality or have low student enrollment will close; thus, only the best schools will continue in operation (Chubb and Moe, 1990; Manno et al., 1999).

Serving students with disabilities has played a major role in debates about market-driven policies as they aim to deliver some of the most essential promises of inclusive education: access

to quality schools and improved educational outcomes for all students (Ainscow et al., 2006). On the one hand, supporters of market-driven policies have claimed that parental choice and school competition will improve services for students with disabilities as schools strive to innovate and improve to attract students (Lake, 2010). However, on the other hand, scholars and activists have raised concern about market mechanisms that entice schools not to enroll or not to provide services for students with disabilities (Mommandi and Welner, 2018). Therefore, research has been produced and used to argue in favor and against market education policies. In the following sections, we examine and critique such utilization of research.

Research utilization in market-driven education reforms

The production and utilization of quantifiable data have been significant features of market-driven reforms. In the last decade, countries around the globe have invested in the massive production of quantitative measures of school "quality" to make policy decisions (McDermott et al., 2011). Standardized assessments, for instance, have exponentially grown both globally and locally, with Latin-American, Caribbean, and the Asian and Pacific regions experiencing the most considerable growth (Benavot and Köseleci, 2015). School districts and state departments of education utilize such data to evaluate schools. It is assumed that parents consider these quantifiable indicators to act as consumers and decide where to enroll their children.

Research plays an important role in the production and analysis of quantifiable indicators. We use a broad definition of research in this paper. By research, we refer to the various kinds and levels of systematic investigation intended to establish "facts" and draw conclusions for policy decisions. We include in this definition of research (a) descriptive analyses of quantifiable indicators (e.g., test scores, graduation and dropout rates, enrollment demographics) such as those produced by school districts or states to evaluate schools and to make policy decisions about opening new schools and closing others as well as to empower parental choice and (b) systematic inferential analysis used by researchers in universities or other non-governmental organizations to compare the effectiveness of market-driven reforms. As these reforms become widespread, descriptive data and their conclusions are framed as unbiased rationales for shifting resources, closing schools, and expanding Public Private Partnerships (PPPs), such as charter schools, for the delivery of public education. Below we discuss and challenge the use of research on three kinds of policy decisions that: (a) punish schools, (b) evaluate PPPs, and (c) empower parental choice.

We aim not to pit quantitative and qualitative studies against each other or to argue that qualitative studies have no role in policy making. There has been continuing debate about the usefulness of quantitative and qualitative research in education that is beyond the scope of this paper (see Hammersley, 2013). Instead, we argue that the most sweeping and consequential policy decisions informed by market-driven educational reforms have heavily, if not solely, relied on quantifiable indicators and reports, and that these decisions are made, at least in rhetoric, to achieve better access and educational services for all students. Yet, the idea that there is a neutral and all-purpose research methodology is misleading at best and produces negative consequences at worst (Hammersley, 2013), particularly for those students and families who experience intersecting forms of exclusion based on disability and other forms of social difference (e.g., race, ethnicity, class).

Punishing schools

Following strict accountability measures, school districts in the U.S have continuously examined quantifiable data from schools, including Students' test scores, dropout rates, graduation rates, and enrollment demographics. Research on such quantifiable indicators has served to determine the fate of schools. Take the case, for instance, of Chicago Public Schools (CPS). CPS is the third largest school district in the U.S, serving over 330,000 students (Chicago Public Schools [CPS], 2021). Students receiving special education services account for 14% of the enrollment, and the students are largely Latinx (46%) and Black (36%; Chicago Public Schools [CPS], 2021). CPS has been a pioneer of market-driven education policies since the mid-1990s, opening more than 120 charter school campuses since then (Lipman, 2011).

Additionally, CPS has punished schools as a policy tool for school improvement. For example, CPS closed more than 100 schools from 2003 to 2014 (Weber et al., 2020). While school closures between 2000 and 2013 were rationalized as weeding out ineffective (i.e., low performing) schools in a competitive school market, the last 50 school closings occurring between 2013 and 2014 were justified by schools' low enrollment. That is, schools that did not have enough enrollment to justify the utilization of a building were closed. Both kinds of rationales used statistical formulas to determine school effectiveness or building utilization as an unbiased measure to make policy decisions (Weber et al., 2020).

Yet, research representations are not just "innocent bystanders." They are authored texts, infused with a host of assumptions and perspectives (Lynch, 1990). Thus, the selection of data to be evaluated, the analysis, how it is represented, and more importantly, how it is narrated demands a great deal of agency and authorship. Meaning is "emplotted" (Wertsch, 1998) in the discourse of policy decisions and represents the ideologies and points of view of the researchers and narrators. While researchers, with ties to particular policy ideas and theoretical

commitments, aim to maximize the impact of their research, policymakers search for the "right" kind of research evidence that supports their agenda (Asen et al., 2011; Hammersley, 2013). Quantitative indicators can be used to obscure key information about a school (e.g., history of the school in the neighborhood and family relationships with the school), while only highlighting its poor performance or limited student enrollment, universalizing a particular truth about the school and its community and constructing a policy decision as inevitable and just (e.g., closing the school; see Waitoller and Radinsky, 2017).

Qualitative and historical research provide a more nuanced understanding of the situation and challenge those "unbiased" mathematical formulas utilized to close schools. Ewings' (2018) ethnographic work, for instance, demonstrates how the rationales and meaning-making process of policy makers are not the same as the rationales and perceptions of communities affected by education policies. When in 2014, CPS hosted community gatherings to discuss the closure of schools, the contrast between the administration and community discourse was striking (Ewing, 2018).

The school district administration presented different graphs, tables, and quantitative rationales to justify the closure of schools. Using a student per classroom formula to justify the under enrollment of a school and the underutilization of a building, they presented their decision as scientific and neutral. However, families did not perceive schools as underperforming or under enrolled. Ewing writes,

> Community members are fighting for an acknowledgment of past harms, an honest reckoning of present injustice, and an acceptance of the reality- a reality in which a school's value is about much more than numbers (p. 124).

To families, schools could not be reduced to a mathematical formula. Families view schools as anchors of community and places in which generations of family members had studied. Schools acted as glue for Black communities; gave breakfast and lunch to students, hosted community events, provided needed services for their children, and served as living memories of their struggles and joys (Ewing, 2019).

Black families affected by school closings knew what was at stake. The school closures had disproportionately affected their neighborhoods (Weber et al., 2020). Eighty percent of students affected by the school closings were Black (Waitoller and Radinsky, 2017). Further, a third of the closed schools had special education programs serving Black students with extensive support needs (i.e., autism, intellectual dis/abilities, multiple dis/abilities, sensory impairments; de la Torre et al., 2015). Such patterns were not a coincidence nor the mere consequence of a mathematical formula. These are neighborhoods in which state-sanctioned policies and private real estate practices established and supported the segregation of Black communities in the South and West sides of Chicago, a process that dates to the early 1900s when Black families moved from rural areas of the Southern U.S to urban centers in the north. Moreover, these areas of the city have experienced persistent poverty and have been marked by economic disinvestment, including the closing of public schools and the opening of charter schools that contributed to further shrink the enrollment of traditional schools (Lipman, 2011; Waitoller, 2020b). Black families' testimonies provided a more accurate narrative of school closings that accounted for historical legacies of racism, which were absent in the school district's rationales based on mathematical formulas.

Thus, though families who experience intersecting forms of exclusion (i.e., race and disability) were particularly affected by the school closures (Waitoller and Super, 2017), their voices were silenced by quantitative rationales. Ball (2012) reminds us, drawing from Foucault, that some groups are positioned as knowledgeable while others are silenced in decision- making processes. Ewing's (2019) work highlights the importance of amplifying the voices of the communities most affected by policy decisions.

Evaluating public private partnerships

Diversification of school options is crucial for developing a competitive education marketplace. One way this diversification is achieved is with the development of PPPs to deliver public school options (Zancajo et al., 2021). There are different kinds of PPPs around the world, e.g., "academies" or "free schools" in England, "escuelas concertadas" in Spain, and charter schools in the U.S, to name a few. Though there are differences among them, they have a common denominator: they are privately run schools funded by public funds (Zancajo et al., 2021). Since their inception, there has been an ongoing debate about the efficacy of these schools as well as equity issues regarding access for minoritized populations. We focused on two relevant debates regarding inclusive education: (a) the effectiveness of PPPs in comparison to traditional public schools and (b) access for students with disabilities. These debates have relied heavily on quantifiable indicators.

Debating the effectiveness of public private partnerships through quantitative indicators

Claiming that charter schools academically outperform traditional public schools has been the main argument for charter school expansion. In general, charter schools produced larger academic gains than traditional public schools, but these findings depend on the methodology and context of the study and tend to be minimal (Miron, 2010). In the U.S, for instance, some studies concluded that African American students and students from low socioeconomic households benefited most from attending charter schools as

they experienced the sharpest increase in math and reading scores (Shakell and Peterson, 2021). However, researchers could not parse whether the relative steepness of the gains was attributed to differences in student proficiencies or from different schooling and teaching efficacy (Shakell and Peterson, 2021). Other studies indicate that students exiting traditional public schools and enrolling in charter schools require 5 years of continuous enrollment before their academic performance and attendance outpace students enrolled in neighboring public schools (Clarke and Burt, 2019).

The so-called "no-excuses" charter schools had also been controversial regarding academic gains. No-excuses charter schools are based on (a) rigorous academic expectations that rely on standardized assessments as a measure of progress, (b) a college-going culture, and (c) strict and narrow disciplinary codes attached to punitive consequences (Cheng et al., 2017). Research suggests that this charter school model produces academic gains for low-income students from racial minoritized backgrounds (Angrist et al., 2013; Cheng et al., 2017). A few studies have also indicated that students with disabilities perform better academically in charter schools than in traditional public schools (Center for Research on Education Outcomes [CREDO], 2015; Setren, 2015). As a result, students with disabilities are more likely to meet critical academic benchmarks that will help improve future life outcomes.

While students with disabilities may demonstrate better performance outcomes in charter schools, qualitative work shows that academic and discipline rigor comes at a high cost for students with disabilities. Waitoller (2020b) demonstrates that the pressure of academic rigor in charter schools tends to come with limited academic support, flexibility, and access to specialized services. Such school practices have severe consequences for students with disabilities that are not limited to parents moving their child to another school. Students with disabilities attending schools in such conditions experience an exacerbation of their mental health and behavioral struggles (Waitoller, 2020b). Waitoller (2020b) documented that some students pull their hair and nails out of anxiety, while others experience depression and rejection to go to school, and in others, aggressive behaviors worsen. In specific circumstances, some students were moved to a therapeutic clinic.

So, how can we make sense of the paradox that some students with disabilities have positive academic outcomes in charter schools (Center for Research on Education Outcomes [CREDO], 2015; Setren, 2015), while others experience severe consequences? Students with disabilities who can succeed in charter schools become the new "tolerable," while the rest occupy a further marginal position. Mitchell (2015) calls the latter group peripheral embodiments: students who cannot be included because of the narrow normative expectations of what it means to be a student that informs school practices. Interestingly, this selective form of "inclusion" appeals to parents and ignites a sense of hope that better educational experiences are obtainable for students with disabilities after so many past frustrations with schools. Charter school advertisements boasting achievement slogans such as "100% college acceptance" give parents hope that their children will achieve similar educational success. That is, those who are "included" reify the efficacy of market-driven forms of "inclusion" (Waitoller, 2020b). Yet, students who become peripheral embodiments experience further marginalization and even, in some cases, pay the cost of "inclusion" with their own mental health. Thus, policy decisions supporting charter schools based on narrow quantifiable school outcomes for minoritized students can reify and reinforce practices that have lifelong consequences for students with disabilities struggling with mental and behavioral health.

Access to public private partnerships for students with disabilities

PPPs have been critiqued for enrolling lower proportions of students with disabilities compared to traditional public schools. Such enrollment difference is more prominent for students with more severe dis/abilities (Waitoller et al., 2017) and varies depending on the locale, disability categories, and grade level (Rhim et al., 2015). There has been an ongoing concern that students with disabilities are underrepresented in charter schools due to pushout practices (Mommandi and Welner, 2018). That is, implicit or explicit practices schools deploy to get rid of students who struggle to learn in charter schools and/or demand specialized and costly services (e.g., speech therapy).

Emerging research utilizing statistical analysis of parents' school preferences and school applications indicates that the low enrollments of students with disabilities in charter schools are not due to pushout practices. Research (Zimmer and Guarino, 2013; Setren, 2015; Winters, 2015) found that low-performing students exited traditional and charter schools at a similar rate. These studies also indicate that the main reason for the special education enrollment gap between charter and traditional public schools can be attributed to students with disabilities enrolling at much lower rates in charter schools in kindergarten, to neighborhood schools identifying students with disabilities at higher rates than charter schools, and to charter schools exiting students from special education at higher rates than traditional neighborhood schools. Finally, attending a charter school reduces the likelihood of being identified with a disability (Winters, 2015; Winters et al., 2017).

Qualitative studies challenge some of these findings. First, steering away practices occur before parents enroll their child with a disability in a charter school. Charter schools use a variety of strategies to shape the demographics of their student enrollment, including marketing strategies advertising rigorous and intensive academic curriculum, communicating to parents that they do not have the services their children may need, requiring parents to volunteer in schools, and having a thematic

focus (e.g., access to prestigious universities) that may not appeal to parents of students with disabilities (Mommandi and Welner, 2018). Thus, students with disabilities may not even enroll in a charter school in the first place, raising equity issues regarding access.

Further, Waitoller (2020b) found that a pushout practice of charter schools consisted in denying or delaying an evaluation to qualify for special education services. In many cases, the children of parents requesting such evaluation received special education services in district-run public schools before moving to a charter school. Studies examining the impact of pushout practices in charter schools' enrollment are not sensitive to this form of pushout as they only account for students who already receive special education services in charter schools. Finally, Waitoller (2020b) found that even when parents and their children with disabilities experience pushout practices and hostility, they may still decide to stay in the charter school. This is because parents do not perceive any other school as a viable option for their child, their child was close to graduation, or they had already moved from school to school too many times and wanted to provide some stability for their children. Such findings raise issues about the kind of educational opportunities students with disabilities experience in charter schools. Further, considering that in urban areas, Black students are disproportionately represented in charter schools, pushout practices (and steering away practices) have special implications for students experiencing interacting forms of exclusion at the intersections of disability and race (Waitoller, 2020b).

Empowering parents as consumers

While test scores, dropout rates, and other quantifiable indicators have served to evaluate schools, they also serve, at least in theory, for parents to compare schools and make the "the best" quality educational choice for their children. In the last decades, to support parental choice, school districts and states in the U.S have produced quantifiable data and research reports. Such "cold knowledge," i.e., the official information from school district and state websites (Kosunen et al., 2015), is intended to be used to evaluate school quality. Yet, such research utilization is not as straightforward as school choice enthusiasts think. Parents construct meaning and generate "hot" knowledge through their grapevines (Ball and Vincent, 1998). That is the configurations, interactions, and influences of social networks and processes that mediates personal concerns, perceptions, and feelings, and knowledge construction about schools (Ball and Vincent, 1998). Thus, parents do not always make decisions based on concrete measurable factors such as academic quality, but on the perceptions of and feelings about the schools and the neighborhoods and communities surrounding them (Buendía et al., 2004). Parents attach meaning to neighborhoods, communities, and schools according to the social, historical, and demographic characteristics of the school location (Bell, 2009; Goyette et al., 2012; Moschetti and Verger, 2020; Waitoller, 2020b). While some parents may conflate safety issues with the school's demographic makeup and the history of the neighborhood around it, other parents send their children to a school within their neighborhood because they identify as part of that community (Bell, 2009). Parents of students with disabilities also evaluate (or attempt to) and share with others information about the kinds and qualities of special education services and the climate toward students with disabilities in schools, information which is difficult to find (Mawene and Bal, 2018).

Further, how parents make educational choices is shaped by the histories and geographies of urban development. Again, take the case of Chicago. Parents' perceptions of safety, academics, and even special education services were influenced by the uneven economic investment from the city government, which is inscribed in the already segregated geographies of the city (Waitoller, 2020b). In the city of Chicago, charter schools are located in the same areas experiencing economic disinvestment and where most school closures occurred due to poor performance or low enrollments (Weber et al., 2020). These are segregated areas in where Black and Latinx communities live. In addition, their perceptions were shaped by austerity measures that slashed special education funds and services (Waitoller, 2020b).

Thus, parents do not act exclusively as rational consumers. Choosing a school is not a rational individualistic decision nor a decision determined by social structures. Choosing a school is a spatial phenomenon (Waitoller, 2020b). Parents experience school choice as "spatial beings" (Soja, 1996). Their decisions are in a dialogue with the history of uneven economic development and the racial segregation shaping the geographies of the city. Making policy decisions under the assumption that parents evaluate quantifiable academic outcomes to make school decisions is erroneous at best and has unintended negative consequences at worst.

Recommendations for research: A call for historical, geographical, and intersectional approach to inclusive education research

In sum, in this paper we have challenged the over reliance on quantitative indicators and research to make policy decisions that affect efforts toward greater inclusivity in schools. We conclude returning to our main question: Can research help to deliver the promises of inclusive education? Our answer to this question is "yes," but research needs to account for the following.

First, quantitative approaches to research alone are not enough to eliminate complex forms of educational exclusion and move toward a more inclusive public education. Decisions based on quantitative research alone are many times harmful to the communities that are supposed to be the beneficiaries of educational policies. Even randomized control trials considered the "golden standard," have significant limitations when explaining policy process or the effectiveness of a policy or practice across social contexts (Hammersley, 2013). The spaces we inhabit have histories of economic, cultural, and political injustices that haunts and subverts any superficial policy effort to remediate inequities. Such histories are inscribed into and have produced unjust geographies that shape the experiences of students and families according to their intersecting forms of social difference (e.g., disability, race, immigration, language, class, and gender). For instance, policy decisions to improve school quality based on academic performance and student enrollments alone can expand and deepen inequities in geographical areas with a history rooted in the intersections of racism, classism, and ableism (Waitoller, 2020b).

Therefore, to promote inclusive policies, research needs to account for the powerful role of historical legacies inscribed in the geographies of urban centers. In other words, decision-making can be neither *ahistorical* nor *ageographical*. Research supporting such decision- making need to combine geo-spatial analysis, historical research, and ethnographic work that aim to understand (a) how unjust geographies have been produced across time through uneven economic development, creating areas of wealth and privilege and others of disinvestment and marginalization (Harvey, 2006) and (b) families and Students' perceptions of and sense of belonging to the spaces they inhabit.

Second, to inform inclusive education policies, research needs to account for interacting forms of injustice and privilege. Research on inclusive education tends to be based on a unitarian approach that emphasizes "a single category of identity or difference or political tradition as the most relevant or most explanatory" (Hancock, 2007, p. 67; Waitoller and Artiles, 2013). In a unitarian approach to policy, one form of social difference (e.g., class, race, or ability) "reigns paramount among others and is therefore justifiably the sole lens of analysis" (Hancock, 2007, p. 68). The development of one form of social difference is independent of other forms of difference. Researchers, for instance, studied the effects of school choice and other market-driven policies on minoritized racial groups (e.g., Lipman, 2011; Buras, 2014), class (Ball, 2003), or students with disabilities (e.g., Collins, 2015). Yet, the examples provided in this article as well as recent research (e.g., Cahill, 2021) indicates that students and their families do not experience one form of oppression but intersecting and interacting ones based on structural forms of ableism, racism, classism, and other forms of "isms."

Policy making for inclusive education needs to be informed by research that adopts an intersectional structural analytical lens (Crenshaw, 1989; Collins, 2000) to understand complex forms of exclusion/inclusion in education and how they affect inclusive education efforts. Continuing with a unitarian approach to research can mask deeper inequities like the ones described in section "Access to PPPs for students with disabilities." For instance, the closing of traditional public schools and pushout or steering away practices in charter schools uniquely affect Black and Latinx students with disabilities (Waitoller and Super, 2017; Waitoller, 2020b). Future research and policy efforts need to account for the intersectional consequences of policy implementation which takes us to our last recommendation.

Finally, a key aspect of inclusive education is the political representation of students and families and their participation in defining and explaining exclusion and the practices and policies needed to dismantle it. Fraser (2009) argues that an important aspect of justice is the right of people affected by policies and practices to represent themselves and advance claims of exclusion and their respective solutions. Young (2002) calls for a deliberative democracy that includes the ideas and voices who are the victims of injustices. As a way of example, the slogan of the disability rights movement, "nothing about us without us," has continued to guide current disability related social struggles. Yet, disability activist Talila Lewis warns us about such political representation, "How does one represent themselves when they do not exist in society's imagination?" (As cited in Annamma and Handy, 2021, p. 5). Lewis (2017) argues for a disability solidarity that grows coalitions amid social struggles to understand and address different kinds of "ism" (e.g., racism, ableism, classism) as interlocking forms of oppression rather than as separate issues. Thus, research must foreground the voices of the most affected: families and students, particularly those experiencing intersecting forms of injustice. They possess a unique and critical expertise on how histories, geographies, and policies are experienced on the ground, an expertise that no quantification can capture.

Conclusion

In this paper, we have engaged with the theme of the special issue: Can research help to deliver the promises of inclusive education? Our argument is informed by a definition of inclusive education based on the redistribution of inclusive education opportunities, the recognition of all forms of ability and cultural differences, and on providing opportunities for political representation for families and students (Waitoller and Annamma, 2017). We used the case of market-driven educational policies to challenge the overreliance on quantitative indicators and research to make policy decisions.

We recommend policymakers attend to research from a variety of methods and particularly to the voices of communities that are the most affected by the issues they are trying to address. Amplifying their voices in research projects will increase the likelihood of more just and inclusive policies in education. Regarding research, if researchers are to play a part in delivering the promises of inclusive education, it is imperative that they account for the histories of urban geographies, intersecting forms of injustice, and the voices of students and families. Otherwise, we will continue to engage in a cyclical discussion to explain why inclusive education has become a tale of selective inclusivity that includes only those who can conform to contemporary and narrow market-driven parameters of what it means to be a learner (Waitoller, 2020a).

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References

Ainscow, M., Booth, T., and Dyson, A. (2006). *Improving schools, developing inclusion*, 1st Edn. England, UK: Routledge. doi: 10.4324/9780203967157

Angrist, J. D., Pathak, P. A., and Walters, C. R. (2013). Explaining charter school effectiveness. *Am. Econ. J.* 5, 1–27. doi: 10.1257/app.5.4.1

Annamma, S. A., and Handy, T. (2021). Sharpening justice through DisCrit: A contrapuntal analysis of education. *Educ. Res.* 50, 41–50. doi: 10.3102/0013189X20953838

Asen, R., Gurke, D., Solomon, R., Conners, P., and Gumm, E. (2011). "The research says": Definitions and uses of a key policy term in federal law and local school board deliberations. *Argument. Advoc.* 47, 195–213. doi: 10.1080/00028533.2011.11821747

Ball, S. J. (2003). *Class strategies and the education market: The middle classes and social advantage*, 1st Edn. England, UK: Routledge. doi: 10.4324/9780203218952

Ball, S. J. (2012). *Foucault, power, and education*. England, UK: Routledge. doi: 10.4324/9780203078662

Ball, S. J., and Vincent, C. (1998). 'I Heard It on the Grapevine': 'hot' knowledge and school choice. *Br. J. Sociol. Educ.* 19, 377–400. doi: 10.1080/0142569980190307

Bell, C. A. (2009). All choices created equal? The role of choice sets in the selection of schools. *Peabody J. Educ.* 84, 191–208. doi: 10.1080/01619560902810146

Benavot, A., and Köseleci, N. (2015). *Seeking quality education: The growth of national learning assessments, 1990-2013*. Paris: United States Educational, Scientific and Cultural Organization, 1–21.

Brenner, N., and Theodore, N. (2002). *Spaces of neoliberalism urban restructuring in North America and Western Europe*. Oxford, UK: Blackwell. doi: 10.1002/9781444397499

Buendía, E., Ares, N., Juarez, B. G., and Peercy, M. (2004). The geographies of difference: The production of the East side, west side, and central city school. *Am. Educ. Res. J.* 41, 833–863. doi: 10.3102/00028312041004833

Buras, K. L. (2014). *Charter schools, race, and urban space: Where the market meets grassroots resistance*, 1st Edn. England, UK: Routledge. doi: 10.4324/9780203067000

Cahill, K. (2021). Intersections of social class and special educational needs in a DEIS post-primary school: School choice and identity. *Int. J. Inclus. Educ.* 1–15. doi: 10.1080/13603116.2021.1968519

Center for Research on Education Outcomes [CREDO] (2015). *Urban charter school study: Report on 41 regions*. Available online at: https://urbancharters.stanford.edu/download/Urban%20Charter%20School%20Study%20Report%20on%2041%20Regions.pdf (accessed October 2019).

Cheng, A., Hitt, C., Kisida, B., and Mills, J. N. (2017). "No Excuses" charter schools: A meta-analysis of the experimental evidence on student achievement. *J. School Choice* 11, 209–238. doi: 10.1080/15582159.2017.1286210

Chicago Public Schools [CPS] (2021). *Stats and facts*. Available online at: https://www.cps.edu/about/stats-facts/ (accessed March 2022).

Chubb, J. E., and Moe, T. M. (1990). America's public schools: Choice is a panacea. *Brook. Rev.* 8, 4–12. doi: 10.2307/20080159

Clarke, F. C., and Burt, W. L. (2019). A Study of the effects of charter schools on student achievement, attendance, and selected mitigating factors in a midwestern state's midsize urban school districts. *Educ. Urban Soc.* 51, 1265–1290. doi: 10.1177/0013124518785015

Clough, P. T. (2000). Comments on setting criteria for experimental writing. *Qual. Inquiry* 6, 278–291. doi: 10.1177/107780040000600211

Collins, K. (2015). "A disability studies in education analysis of corporate-based educational reform: lessons from New Orleans," in *Practicing Disability Studies in Education, Acting Toward Social Change*, eds D. J. Connor, J. W. Valle, and C. Hale (New York, NY: Peter Lang), 217–233.

Collins, P. H. (2000). Gender, black feminism, and black political economy. *Ann. Am. Acad. Polit. Soc. Sci.* 568, 41–53. doi: 10.1177/000271620056800105

Crenshaw, K. (1989). Demarginalizing the intersection of race and sex: A black feminist critique of antidiscrimination doctrine, feminist theory and antiracist politics. *Univ. Chicago Legal Forum* 1989, 139–167.

Crenshaw, K. (1992). Race, gender, and sexual harassment. *Southern California Law Rev.* 65, 1467–1476.

de la Torre, M., Gordon, M. F., Paul, M., and Cowhy, J. (2015). *School Closings in Chicago: Understanding Families' Choices and Constraints for New School*

Enrollment. Available online at: https://consortium.uchicago.edu/publications/school-closings-chicago-understanding-families-choices-and-constraints-new-school

Edwards, D. B. Jr., and Means, A. (2019). Globalization, privatization, marginalization: Mapping and assessing connections and consequences in/through education. *Educ. Policy Anal. Arch.* 27, 1–33. doi: 10.14507/epaa.27.5091

Ewing, E. L. (2018). *Ghosts in the schoolyard: Racism and school closings on Chicago's south side*. Chicago, IL: University of Chicago Press. doi: 10.7208/chicago/9780226526331.001.0001

Ewing, E. L. (2019). The fight for Dyett: How a community in Chicago saved its public school. *Am. Educ.* 43, 30–40.

Fraser, N. (2009). *Scales of justice: Reimagining political space in a globalizing world*. New York, NY: Columbia University Press.

Goyette, K. A., Farrie, D., and Freely, J. (2012). This school's gone downhill: Racial change and perceived school quality among whites. *Soc. Prob.* 59, 155–176. doi: 10.1525/sp.2012.59.2.155

Grindal, T., Schifter, L. A., Schwartz, G., and Hehir, T. (2019). Racial differences in special education identification and placement: Evidence across three states. *Harvard Educ. Rev.* 89, 525–553. doi: 10.17763/1943-5045-89.4.525

Hammersley, M. (2013). *The Myth of Research-Based Policy & Practice*. Thousand Oaks, CA: Sage Publications Ltd. doi: 10.4135/9781473957626

Hancock, A. M. (2007). When multiplication doesn't equal quick addition: Examining intersectionality as a research paradigm. *Perspect. Polit.* 5, 63–79. doi: 10.1017/S1537592707070065

Harvey, D. (2006). *Spaces of global capitalism: Towards a theory of uneven geographical development*. London, UK: Verso.

Kosunen, S., Carrasco, A., and Tironi, M. (2015). The role of 'hot' and 'cold' knowledge in the choice of schools in Chilean and Finnish Cities, in *Contrasting Dynamics in Education Politics of Extremes: School Choice in Chile and Finland*, eds P. Seppänen, A. Carrasco, M. Kalalahti, R. Rinne, and H. Simola (Leiden: BRILL), 139–157.

Kurth, J. A., Ruppar, A. L., Toews, S. G., McCabe, K. M., McQueston, J. A., and Johnston, R. (2019). Considerations in placement decisions for students with extensive support needs: An analysis of LRE statements. *Res. Pract. Persons Severe Disabil.* 44, 3–19. doi: 10.1177/1540796918825479

Lake, R. J. (2010). *Unique schools serving unique students: Charter schools serving students with special needs*. Seattle, WA: Center on Reinventing Public Education.

Lewis, T. (2017). *Emmett Till and the pervasive erasure of disability in conversation about White supremacy and political violence*. Available online at: https://www.talilalewis.com/blog/emmett-till-disability-erasure (accessed March 2022).

Lipman, P. (2011). *The new political economy of urban education: Neoliberalism, race, and the right to the city*. England, UK: Routledge.

Lynch, M. (1990). "The externalized retina: Selection and mathematization in the visual documentation of objects in the life sciences," in *Representation in scientific practice*, eds M. Lynch and S. Woolgar (Cambridge, MA: MIT Press), 19–68.

Manno, B. V., Vanourek, G., and Finn, C. E. (1999). Charter schools: Serving disadvantaged youth'. *Educ. Urban Soc.* 31, 429–445. doi: 10.1177/0013124599031004004

Mawene, D., and Bal, A. (2018). Factors influencing parents' selection of schools for children with disabilities: A systematic review of the literature. *Int. J. Spec. Educ.* 33, 313–329.

McDermott, R., Edgar, B., and Scarloss, B. (2011). "Global norming," in *Inclusive education: Examining equity on five continents*, eds A. J. Artiles, E. B. Kozleski, and F. R. Waitoller (Cambridge, MA: Harvard Education Press), 223–235.

Miron, G. (2010). "Performance of charter schools and implications for policy makers," in *The charter school experiment: Expectations, evidence, and implications*, 1st Edn, eds C. A. Lubienski and P. C. Weitzel (Cambridge: Harvard Education Press), 73–92.

Mitchell, D. T. (2015). *The biopolitics of disability: Neoliberalism ablenationalism, and peripheral embodiment*. Michigan, US: The University of Michigan Press. doi: 10.3998/mpub.7331366

Mommandi, W., and Welner, K. (2018). "Shaping charter enrollment and access," in *Choosing Charters: Better schools or more segregation?*, eds I. C. Rotberg and J. L. Glazer (New York, NY: Teachers College Press), 61–81.

Moschetti, M. C., and Verger, A. (2020). Opting for private education: Public subsidy programs and school choice in disadvantaged contexts. *Educ. Policy* 34, 65–90. doi: 10.1177/0895904819881151

Rhim, L. M., Kothari, S., and Lancet, S. (2015). *Key trends in special education in charter schools in 2015-2016: Secondary analysis of the civil rights data collection. National Center for Special Education in Charter Schools*. Available online at: https://www.centerforlearnerequity.org/report/crdc-analysis/ (accessed August 2022).

Scott, J., and Holme, J. J. (2016). The political economy of market-based educational policies: Race and reform in urban school districts, 1915 to 2016. *Rev. Res. Educ.* 40, 250–297. doi: 10.3102/0091732X16681001

Setren, E. (2015). *Special Education and English Language Learner Students in Boston Charter Schools: Impact on Classification*. Available online at: https://www.heartland.org/publications-resources/publications/special-education-and-english-language-learner-students-in-boston-charter-schools-impact-and-classification

Shakell, D. M., and Peterson, E. P. (2021). Charter schools show steeper upward trend in student achievement than district schools. *Educ. Next* 21, 40–47.

Slee, R. (2005). "Education and the politics of recognition: Inclusive education—an Australian snapshot," in *Contextualizing Inclusive Education: Evaluating old and new international paradigms*, 1st Edn, ed. D. Mitchell (England, UK: Routledge), 139–165. doi: 10.4324/9780203606803

Soja, E. W. (1996). *Thirdspace: Journeys to Los Angeles and other real-and-imagined places*. Oxford, UK: Basil Blackwell.

Waitoller, F. R. (2020b). *Excluded by choice: Urban students with disabilities in the education marketplace*. New York, NY: Teachers College Press.

Waitoller, F. R. (2020a). "Why are we not more inclusive? An analysis of neoliberal inclusionism," in *Inclusive Education: Global Issues & Controversies*, eds C. Boyle, S. Mavropoulou, J. Anderson, and A. Page (Rotterdam: Sense Publishers), 89–107. doi: 10.1163/9789004431171_006

Waitoller, F. R., and Annamma, S. A. (2017). "Taking a spatial turn in inclusive education seeking justice at the intersections of multiple markers of difference," in *The Wiley handbook of diversity in special education*, eds M. Tejero Hughes and E. Talbott (Hoboken, NJ: Wiley & Sons), 23–44. doi: 10.1002/9781118768778.ch2

Waitoller, F. R., and Artiles, A. J. (2013). A decade of professional development research for inclusive education: A critical review and notes for a research program. *Rev. Educ. Res.* 83, 319–356. doi: 10.3102/0034654313483905

Waitoller, F. R., and Kozleski, E. B. (2013). Understanding and dismantling barriers for partnerships for inclusive education: A cultural historical activity theory perspective. *Int. J. Whole School.* 9, 23–42.

Waitoller, F. R., Maggin, D. M., and Trzaska, A. (2017). A longitudinal comparison of enrollment patterns of students receiving special education in urban neighborhood and charter schools. *J. Disabil. Policy Stud.* 28, 3–12. doi: 10.1177/1044207317694846

Waitoller, F. R., and Radinsky, J. (2017). "Using spatial analysis to understand inequities at the intersections race and disability," in *The spatial search to understand and address educational inequity to inform praxis*, eds D. Morrison, S. Annamma, and D. Jackson (Sterling VA: Stylus), 147–164.

Waitoller, F. R., and Super, G. (2017). School choice or the politics of desperation? Black and Latinx parents of students with dis/abilities selecting charter schools in Chicago. *Educ. Policy Anal. Arch.* 25, 55. doi: 10.14507/epaa.25.2636

Waitoller, F. R., and Thorius, K. K. (2015). Playing hopscotch in inclusive education reform: examining promises and limitations of policy and practice in the US. *Support Learn.* 30, 23–41. doi: 10.1111/1467-9604.12076

Weber, R., Farmer, S., and Donoghue, M. (2020). Predicting school closures in an era of austerity: The case of Chicago. *Urban Affairs Rev.* 56, 415–450. doi: 10.1177/1078087418802359

Wertsch, J. V. (1998). *Mind as action*. New York, NY: Oxford University Press. doi: 10.1093/acprof:oso/9780195117530.001.0001

Winters, M. A. (2015). Understanding the gap in special education enrollments between charter and traditional public schools: Evidence from Denver, Colorado. *Educ. Res.* 44, 228–236. doi: 10.3102/0013189X15584772

Winters, M. A., Carpenter, D. M., and Clayton, G. (2017). Does attending a charter school reduce the likelihood of being placed into special education? Evidence from Denver, Colorado. *Educ. Eval. Policy Anal.* 39, 448–463. doi: 10.3102/0162373717690830

Young, I. M. (2002). *Inclusion and democracy*. Oxford, UK: Oxford University Press. doi: 10.1093/0198297556.001.0001

Zancajo, A., Fontdevila, C., Verger, A., and Bonal, X. (2021). *Regulating public-private partnerships, governing non-state schools: An equity perspective*. Paris: UNESCO.

Zimmer, R. W., and Guarino, C. M. (2013). Is there empirical evidence that charter schools "push out" low-performing students? *Educ. Eval. Policy Anal.* 35, 461–480. doi: 10.3102/0162373713498465

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Exploring factors that full-service school teachers believe disable their self-efficacy to teach in an inclusive education system

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Introduction: Teachers' sense of self-efficacy has been identified by research as a key factor in the successful implementation of inclusive education. This article reports on disabling factors in South Africa that are reportedly influencing inclusive Full-Service school (FSS) teachers' sense of self-efficacy to implement inclusive education successfully.

Methodology: A qualitative study, using semi-structured individual and group interviews as well as collages, was employed.

Results: The findings revealed that the disabling factors included internal and external factors. Internal factors comprised a lack of knowledge and skills, including a lack of self-confidence, FSS teachers seeing themselves as a barrier, and physical and psychological problems. External factors were also identified. They are ineffective implementation of inclusive education, inadequate training, incompetent education department officials and managers, a lack of support from the education department, curriculum constraints, as well as disabling factors within the school system. Negative media perceptions were also mentioned.

Conclusion: It was concluded that it is important for the basic and higher education departments of education to be aware of the identified disabling factors and purposefully attempt to improve the external factors, while ensuring that FSS teachers' capabilities are developed and sustained in in-service and pre-service teacher education. This could contribute to developing and improving their sense of self-efficacy.

KEYWORDS

teachers, self-efficacy, inclusive education, disabling factors, social-cognitive theories

Introduction

Inclusive education requires teachers to be effective in providing quality education for all learners, despite them having diverse learning needs (Nel et al., 2022). In such a classroom it is essential for teachers to have a sense of self-efficacy, since the effectiveness of teaching is influenced by teachers' own personal evaluation of how capable they are of teaching (Wood and Olivier, 2010; Ryan and Mathews, 2022). Self-efficacy can be defined as the belief in one's capabilities to organize and execute the course of action required to produce results (Bandura, 1994) and has been identified as a major mediator for behavior, and importantly, for behavioral change (Zee and Koomen, 2016; Savolainen et al., 2022). Positive self-efficacy beliefs are related to an internal locus of control and motivation (Wood and Olivier, 2010) which requires a continuous review of a teacher's capabilities in order to bring about the desired outcomes of learner engagement and learning. This can result in a spiral nature of positive self-efficacy beliefs, meaning that the ability to achieve success creates a new successful experience which then affects the efficacy beliefs in a progressive positive way (Zimmerman and Cleary, 2006). For this study, Bandura's definition of self-efficacy within the social cognitive theory was chosen to underpin the research. Theories about self-efficacy include social cognitive theory, social learning theory, self-concept theory and attribution theory, but various

researchers affirm that self-efficacy is best understood in the context of social cognitive theory (e.g., De Oliviera Fernandez et al., 2016; Liu et al., 2020; Schunk and DiBenedetto, 2020). The social-cognitive theory expounds the understanding, nature and causes of human behavior and motivation (Skaalvik and Skaalvik, 2010). It specifically emphasizes how cognitive, behavioral, personal, and environmental factors interact to determine motivation and behavior (Crothers et al., 2008). In this regard self-efficacy emphasizes the evolution and exercise of human agency in order for people to have some influence over what they do (Bandura, 2006).

Teacher self-efficacy can be conceptualized as believing in one's own abilities to be an accomplished teacher, as well as being able to deal with challenges in the school environment and classroom (Bandura, 1997; De Oliviera Fernandez et al., 2016). Teachers with a high sense of self-efficacy tend to experiment with methods of instruction, seek improved teaching methods and experiment with instructional materials (Griful-Freixenet et al., 2021; Devi and Ganguly, 2022) which result in positive teaching behaviors and higher learner performance (Temiz and Topcu, 2013). They therefore believe that they can influence how well learners learn and persist with those learners who may be considered difficult or unmotivated (Klassen and Chiu, 2010; Guskey and Passaro, 2012). Kosko and Wilkins (2009) affirm that concerning learners who have special education needs self-efficient teachers are more inclined to include them in mainstream classes and not refer them to special education settings. Consequently, teachers with a high sense of self-efficacy could be more motivated to implement inclusive education successfully. However, research studies have shown that adequate preparation, training, and support are important requirements for a high level of teacher self-efficacy beliefs in an inclusive education environment (Savolainen et al., 2012). Yet, regardless of all the support and training South African teachers have already received regarding inclusive education, they still seem to feel disempowered and ineffective in the implementation of inclusive education (Engelbrecht et al., 2017; Nel, 2020; Walton and Engelbrecht, 2022). This results in negative attitudes, demotivation, a lack of self-control and a low sense of self-efficacy disabling them to teach effectively in an inclusive classroom (Bandura, 2006; Memisevic et al., 2021; Van Mieghem et al., 2022). In the South African context teachers have to deal with complex socio-, economic-, political-, cultural-and language situations both in and out of the classroom. This often creates stress which can exacerbate feelings of loneliness, isolation and disempowerment (Clipa, 2017) and consequently a feeling of inefficiency. Teachers are often so discouraged by this loss of control that they lose their enthusiasm and motivation, and as a result, the entire learning process can be hampered (Prinsloo and Gasa, 2016) resulting in not committing to implementing inclusive education effectively.

South Africa has introduced inclusive education with Education White Paper 6 (EWP6) in 2001 [Department of Education (DoE), 2001]. One of the key strategies of EWP6 was to increasingly transform ordinary mainstream primary schools into inclusive Full-Service Schools (FSS). Thus, the current school system consists of ordinary mainstream schools, special schools and FSS. The ordinary mainstream school mainly has learners who need low-intensive support and learners in special schools have high-intensive support needs (Department of Education (DoE), 2001). In this article factors that disable teachers' sense of self-efficiency to teach in FSS in South Africa, have been explored in order to identify what needs to be addressed by education systems and teacher education to enhance teachers' sense of self-efficacy so that they can feel more empowered and equipped to teach effectively. A FSS can be viewed as a mainstream school which provides quality education for all learners by meeting the full range of learning needs in an equitable manner. This means that these schools should provide education for regular learners, as well as those with disabilities in an inclusive setting (Department of Education (DoE), 2001). However, the transformation of these schools have been started recently and are still experiencing various challenges to make inclusion work (Ayaya et al., 2021; Makhalemele and Nel, 2021). During the transformation teachers in these schools are usually not consulted or asked by the department of basic education if they are committed to inclusion. They are simply expected to remain and teach in an inclusive manner as required by policy, i.e., EWP6.

Consequently, this research was guided by the following research question: What influences FSS teachers' sense of self-efficacy, disabling them to implement inclusive education successfully?

Research methodology

A qualitative interpretive design, by employing a multiple case study (two FSS) as strategy of inquiry, was chosen for this study. Data was collected through semi-structured focus group and individual interviews (Creswell, 2012), as well as collages (Van Schalkwyk, 2010). The use of three data collection methods ensured that rich data were collected, and that validity and reliability could be ensured. Interviews are a well-known and used qualitative data collection method. Collages were deemed a valuable data collection tool as it is regarded as a symbolic representation which exposes social meaning, process and values (McMillan and Schumacher, 2014). It is also a process of narrating life experiences using linguistic and non-linguistic modes of expression (Van Schalkwyk, 2010). Butler-Kisber and Poldma (2010) assert that collages can assist in conceptualizing a phenomenon and get a more nuanced understanding of it.

Sampling

The population sample was drawn from two FSS in the Vaal Triangle area of South Africa. Both schools are located in a semi-rural township with low socio-economic levels and limited resources. The schools were identified as FSS by the Gauteng Department of Education (GDE). The principals indicated that they were eager to be FSS because they believed in the principle of inclusion. However, they acknowledge that many challenges remain.

Participants were purposively selected in terms of their suitability and convenience for the study (Creswell, 2012). These included qualified teachers currently working in the selected FSS, and who were willing and committed to participate in this study. FSS were chosen, because they are intended to function as fully inclusive education institutions providing quality education for all learners, irrespective of disability or differences in learning style or pace. Two FSS that were in close proximity to each other were selected, since they are in the same socio-economic environment and therefore limited too wide a range of systemic variables. Twenty eight teachers voluntarily participated in this research, 14 from the first school and 14 from the second school. All these participants were qualified teachers and had 5 years or more teaching experience. Five of these participants had a post graduate degree, specializing in learner support and two had a Masters degree in Education in specific subject fields. Thus, based on qualifications and experience these participants were deemed able to provide rich data.

Data collection process

Two semi-structured focus group interviews were conducted in each of the selected schools. The groups consisted of between six to eight participants each which is confirmed by Cobern and Adams (2020) as acceptable group sizes. The groups were divided into Foundation Phase (Grade 0 to 3) and Intermediate Phase (Grade 4 to 6) teachers. In school A the first focus group consisted of six participants and the second of eight participants. The focus groups in School B had seven participants in each group. The interviews were not longer than an hour and participants were allowed to take short comfort breaks where needed. Probing and prompts were used during the interviews to ensure rich and saturated data. All focus group and individual interviews were audio-tape-recorded during the research process and verbatim transcribed.

During these interviews the following list of semi-structured questions was used:

- How do you feel about teaching within an inclusive education system?
- What does the term teacher self-efficacy mean to you?
- What do you believe is disabling your sense of teacher self-efficacy within an inclusive Full-Service School?

During the collage-making activity, the participants got the opportunity to express their feelings visually about their sense of teacher self-efficacy within an inclusive education system. Ten participants voluntary (five teachers from each school) made two collages each. The material, including paper, glue, pens and a large variety of magazines were provided by the principal researcher. The participants could also use their own material if they wanted to. In the first collage (collage one) they had to illustrate how they experienced their self-efficacy currently in teaching within an inclusive education system and in the second collage (collage two) how they would want their self-efficacy to be. This was an individual activity and the participants were allowed to choose a venue at the schools where they felt comfortable and could not be disturbed. Afterwards the participants were individually interviewed about their collages to gain insight in what they believe is disabling their sense of teacher-self-efficacy.

Ethical considerations

Ethics approval was gained from the Higher Education Institution under whose supervision this study was conducted, the Gauteng Department of Education, as well as from the school principals. Each participant also signed an informed consent letter where the purpose of the research was explained to them. In this letter it was also indicated that they could withdraw from the study at any moment. Confidentiality was ensured for the individual activities, but it was explained that it cannot be fully guaranteed during the group interviews.

Role of the researchers

The qualitative researcher is seen as the most important instrument in the data-collection research process and therefore the principal researcher was an integral part of each step in the data-collection process (Merriam, 2009; Creswell, 2012). The secondary researcher acted as controller of all the research processes. Both researchers were intensely aware of the fact that personal involvement can introduce a range of strategic, ethical, and personal issues. Consequently, the principal research constantly reflected with the secondary researcher to ensure that objectivity was upheld. Objectivity included remaining true to the research aim, being impartial to the outcome of the research, acknowledging possible preconceptions and operating in as unbiased and value-free a way as possible (Association for Qualitative Research, 2012). The participants were anonymized, and the principal researcher was the only one who had contact with them during the data collection process and during member-checking. The different roles of the researcher and the participants were also clarified with all the participants at the start of the research.

Data analysis

The data obtained from the verbatim transcriptions of the four semi-structured group and ten individual interviews, as well as the collages were inductively analyzed by using a constant comparative method (Merriam, 2009). When using this method to analyze qualitative data, one segment of data (collages) is compared with another (semi-structured interviews) to determine similarities and differences (Merriam, 2009). The overall objective of the constant comparative analysis is also to identify patterns in all the data which are arranged in relationship to one another (Merriam, 2009). By using an inductive content analysis the data directed a set of integrated codes and themes that emerged, rather than imposing a set of codes onto them (Creswell, 2012). Five phases were implemented during the data analysis, including organizing and preparing the data, reading through the verbatim, transcriptions repeatedly, coding the data, assigning categories, themes and sub-themes and then interpreting the data. The data analysis process was guided by the research question.

Trustworthiness

Crystallization was applied to ensure credibility and confirmability (Merriam, 2009; Creswell, 2012). Different data collection methods were used, to ascertain a rich description of the phenomenon under exploration. Themes were only obtained after the data was studied in-depth and then member-checking was also applied to ensure that the participants' statements and descriptions were appropriately interpreted. The goal of crystallization is not to confirm the accuracy of people's perceptions or to report the real reflections of a situation, but rather to ensure that the findings relating to people's perceptions are reflected accurately (Merriam, 2009).

Findings

The factors that were identified as disabling teachers' self-efficacy are presented and discussed in categories, with relevant main themes and sub-themes. Direct quotations are used to substantiate the categories, themes and sub-themes. The P indicates the participant whose quote was used, S for the school (A or B), F for focus group interview one or two, I for individual interview and C for the collages. For example, SA F1 P1 refers to School A: Focus group: 1 Participant 1 (Table 1).

TABLE 1 Summary of categories, themes and sub-themes.

Main theme	Sub-theme
Lack of knowledge and skills	• Lack of confidence in teaching • The teacher as barrier • Physical and psychological problems
Disabling factors as influenced by the Department of Basic Education (DBE)	• Ineffective implementation of inclusive education • Inadequate training • Incompetent DBE leaders/managers • Lack of support or acknowledgement from DBE • Curriculum constraints
Disabling factors within the school system	• School management • Lack of support and resources • Peer relations • Parents • Overcrowded classrooms
Other discouraging external factors	• Negative influences from media • Disrespect and false perceptions by society

Lack of knowledge and skills

The sub-themes of this main theme are focused on the experiences of the participants that emanate as a result of having limited knowledge and skills. This was reported by the participants as having a lack of confidence in their own teaching; the teacher as a barrier him/herself; and the psychological and physical problems they experience.

Lack of confidence In teaching

A lack of confidence in teaching within and inclusive education system were experienced by most participants. This was especially evident in the collages where the participants demonstrated negative feelings regarding inclusive education such as *"confused and frustrated" (SB C7 P7),* and the lack of knowledge "*wondering how am I going to do it" (SB C7 P7)*. Participants clarified this by explaining that they still felt new in the field (inclusive education), had too little knowledge and therefore lacked confidence in their own teaching abilities. This is reflected in the following quote: "*Frustrated not knowing exactly what is right, because we are new in the field, and I do not feel confident in my own teaching ability anymore" (SB F2 P3)."*

The teacher as barrier

The participants reported that because they felt incompetent and inadequate to address all learners' needs they experienced an increased sense of failing these learners. This resulted in making them feel like being the barrier themselves, as apparent in the statement:. "*I become the barrier, because I do not know to handle all the barriers and I feel like I'm failing my learners, I'm failing at my task to teach" (SA I3 P3).* All the participants declared that they are keen to help learners, but despite being willing and attempting to provide support, they still felt incompetent to address diverse needs: *"I am trying my very best, I can see that I cannot reach them like they are supposed to be reached you know" (SA F1 P1).*

Physical and psychological problems

Participants asserted that their lack of knowledge and skills influenced their mental and physical health negatively. One participant described it as follows: "*I do not feel healthy anymore, because I'm failing my learners, I'm failing at my task to be a good teacher" and "I really feel stressed and drained, because I know so little about inclusive education and I do not know what to do for the first time in my life, I always rated myself as a good teacher, but really now my body is giving in, and I think all teachers are very stressed, I mean you can check in every teacher's handbag there will always be pills and other medication that they need to take for headache or depression continuously to cope" (SB F2 P1).*

Disabling factors as influenced by the Department of Basic Education

Factors disabling teachers' self-efficacy as influenced by the DBE resulted in five sub-themes. These include ineffective implementation of inclusive education; inadequate training; incompetent departmental leaders/managers; a lack of support and acknowledgement; and curriculum constraints.

Ineffective implementation of inclusive education

Most participants revealed that the way in which the Department of Basic Education (DBE) commenced and implemented inclusive education are ineffective. This is summarized in the following statement: "*It was not effectively done, we still do not know how to make use of effective inclusion strategies" (SA F1 P4).*

Inadequate training

Training was affirmed by all the participants as an important prerequisite for enhancing their sense of self-efficacy since this leads to increased knowledge and skills, which they felt can improve confidence in their own ability. This is reflected in the following assertion of a participant: "*When we get enough training we feel more empowered to practice inclusion and therefore we must get more opportunities to go for training.*" Nevertheless, it was strongly emphasized that the training they do receive from the DBE was not adequate enough: *"the department expects us to implement without proper training" (SB F1 P6).*

Incompetent DBE leaders/managers

The participants also mentioned that leaders or managers, for example, the District Based Support Team (DBST), do not always seem competent to provide support. As one participant stated: *"Even the districts officials there are those, those who are appointed there not knowing most of the things and if you go to them and you need help, they are unavailable and if you find them they say no you do not do that. She or he will give you the wrong information" (SB F2 P1).* This resulted in many participants trying to find information on their own because they believed that they were not given the correct information and as a result it seems that mistrust develops between teachers and District officials. This is affirmed in the following opinion of a participant: *"Then you have to go through the documents and you google on your own and then get the correct thing, your facilitator did not tell you the correct thing, so the trust for that person is, you know, not there" (SB F2 P1).*

Lack of support or acknowledgement from DBE

All the participants concluded that support from the DBE does not only need to be increased, but needs to be improved. One participant declared: *"The department must support us more and the way they are helping should be better" (SA F1 P2).* Another one confirmed that an effective support system is needed: *"If we can have a support system that is effective within the education system in schools" (SA F2 P1).*

Curriculum constraints

The prescribed curriculum assessment policy statements (CAPS) seem to place constraints on the participants to be flexible in their teaching. This frustrates them, because it does not allow time to make modifications for learners who struggle. In addition, continuous curriculum changes that took place from 1997 results in feeling of uncertainty. This is affirmed by one participant's claim: *"Because if they have a system a consistent system you are going to have confidence you can do it. But if the system keeps on changing from time to time, like you see this year we are doing this and then you do CAPS and next time you are doing another thing. I think that there are also a lot of changes if the system is not consistent, it will also cause people not to know exactly what they are doing. Those changes that are coming up from time to time, they also make you as a teacher to unsure of what you are doing" (SB F2 P1).*

Disabling factors within the school system

Factors that have been reported as disabling teachers' self-efficacy from within the school system involved the school management, a lack of support and resources, peer relations, parents and overcrowded classrooms.

School management

Most participants reported a need for acknowledgement, being valued and experiencing trust from the school management team. One participant summarized it as follows: *"It's not easy to be a teacher. But at least if in the management of the school somebody will acknowledge if you put more effort into your work. But normally it is not the situation, under normal circumstances, in very few instances where you will find somebody acknowledging that at least I can see what you are doing" (SB F2 P13).*

Lack of support and resources

The participants also emphasized the lack of support which adds to the challenge of implementing inclusive education. One participant commented: *"Inclusion is very hard for us when we do not get any support, it really makes your job very difficult we cannot do this on our own" (SB F1 P3).* Another participant asserted that they do not have psychologists and other human resources available, as other schools have, which causes negativity toward inclusive education. *"And maybe one other thing that makes me to feel this negative about inclusion is about the lack of resources. Because I have seen school who have so many things like psychologies, human resources, which we do not have at our school" (SA F1 P1).* Participants reported that help from professionals such as doctors, nurses, psychologist and social workers need to be increased. They explained that inclusion policies require them to work with these health professionals, but asserted that there have to be more of these services available for learners as well as teachers: *"The policy says we must work with doctors and professionals to help us with the learners, but there must be more of these available to us for assistance with our job and our personal health" (SB I6 P6).*

Peer relations

Peer relations between teachers also seemed to influence teachers' sense of self-efficacy. Most participants reported that their colleagues who teach with them in the same school were on different paths regarding the implementation of inclusive education. This is evident in the following comment of a participant: *"With the school I do not see that we are not on the same path. There are those who understand and mostly, they are still puzzled and confused on how to implement inclusive education. And you know some other thing with their colleagues, some people do not feel free to come and ask or to share ideas if they knew. Some people, you know, he or she decides to just go on with the wrong thing in their classroom" (SA F1 P1).* These different paths made the participants feel that they are working in isolation which creates a negative attitude as well as demotivation to implement inclusive education. One participant explained: *"A colleague working in isolation and functioning in his own world and who do not share the common world philosophy belief with other teachers, it makes us negative discouraged" (SA F2 P3).* It was also emphasized by other participants in the following statements: *"We have to realise that we need each other to be better teachers, to grow personally, to improve our education in South Africa and inclusion for all. You cannot just do it on your own"* and *"As a teacher I must play my cards openly not closed you are going to be there to share and gain knowledge and will make me mature as a teacher" (SA F2 P14).*

Parents

Parental involvement also clearly stood out as a problem as evident in the following affirmation: *"We really need the parents to be part of the learners' education" (SB I6 P6).* Participants asserted that parents are uninvolved and do not attend parent meetings. This is confirmed in statements such as: *"That's the other thing. With parents I'm so glad that the department of education took it further that they need to involve parents. I do not know why but they are still not giving us their participation" (SA F1 P3).* When learners display behavior and discipline problems, participants particularly expressed that they need the support of parents. However, it was also acknowledged by the participants that parent support is a complex issue. Where parents are deceased, grandparents take care of the children or parents working long hours leave their children with unrelated caregivers.

Overcrowded classrooms

Overcrowded classes have been emphasized as a major cause of adding to the participants feeling ineffective, because they feel they cannot give attention to all the learners. One participant commented: *"Eh, I think the other problems we are facing as teacher is the ratio, the learner ratio between the teachers, you find that in some classes it is 1 is to 60, the teacher has to teach 60 learners in one class so that is impossible to give your full notice to all and it's also a factor that is contributing maybe a lack of our effectiveness" (SB F1 P2).*

Other discouraging external factors

External factors that discouraged teachers' self-efficacy that were identified included the media and disrespect as well as false perceptions by society.

Negative influences from media

Continuous negative comments by the media instead of recognizing important contributions of teachers' work and effort, demotivated the participants. This is evident in the following statement: *"Sometime the media always criticises teachers, when they talk about the negative things about the teachers, how, they make it on the front page, and so they are demotivating us as educators. So most of the time they do not show the quality things, they always show negative things that have been done by the teachers, the quality one is always at the back, they are hiding, but the good ones, ah the bad ones, so when you look at the media always it see negative things about the teacher, you become demotivated so we need positive affirmation" (SB F1 P3).*

Disrespect and false perceptions By society

Fallacious perceptions by society in general about teachers as mentioned by one participant: *"teaching is an easy course or a half day job"* appear to demoralize the participants and make them feel as if they are *"not trusted and respected by the community, learners or country."* The following participant affirmed that: *"it is like our profession is nothing, why cannot they change their perception of teachers and realise that it is a full time, 24 h job, because you always take work home" (SB F2 P4).*

Discussion

It seems evident from the findings that there are certain critical factors resulting in disabling Full-Service school teachers' sense of self-efficacy in teaching within an inclusive FSS.

Inclusive education has globally brought about new teaching requirements and changes. Classrooms now have a wider range of diverse learning needs (including learners who experience barriers to learning and disabilities) and this impacts significantly on classroom practice as well as on teachers' themselves and how they perceive their own sense of self-efficacy (Savolainen et al., 2012; Sharma et al., 2012; Savolainen et al., 2022). This appears to be especially applicable to the FSS's where this study was conducted. During the time of the research all the participants in these schools had their pre-service teacher education before inclusive education was introduced and therefore had no formal initial teacher education training on inclusive education and teaching learners who experience barriers to learning. Since the introduction of EWP6 in 2001 they were only exposed to afternoon workshops, presented by the DBE. Yet they are required to teach in a fully inclusive FSS. The frustration of the participants is reflected in their statements in which they acknowledge their lack of understanding (what inclusive education is all about) and limited knowledge and skills as a result of inadequate training to deal with all the new challenges that an inclusive teaching environment created. This seems to impact negatively on their confidence, resulting in progressive feelings of incompetence, in being able to teach learners with a diversity of needs in one classroom. Feeling confident and competent as teachers are important features of a positive sense of self-especially within the context of the challenges the participants mentioned in this research. Adequate content knowledge and teaching skills will lead to improved teaching performance and to a more confident perception of one's own competence, which is necessary for effective teaching in an inclusive classroom (Organisation for Economic Co-operation and Development (OECD), 2009).

A key disabling factor identified in this study is that the participants' feelings of incompetence to address all learners' needs makes them believe that they are failing the learners and are consequently the barrier to the learners' successful learning. Other research studies (Wood and Olivier, 2010; Memisevic et al., 2021; Van Mieghem et al., 2022), conducted with teachers also identified feelings of fear, frustration, negativity and failure about their own ability to deal with disabilities which they then believed lead to lower academic standards. Thus, giving urgent attention to teachers in FSS's feelings of incompetence is critical as it can lead to a decreased capacity to perform, reduced efficiency, as well as poor health, mental and physical wellbeing and ultimately to a low sense of self-efficacy (Shulman, 2013; El-Sayed et al., 2014; Lynch, 2019).

The ineffective management of the DBE in implementing inclusive education has been asserted as disabling the participants sense of self-efficacy teaching in a FSS. This finding is supported by other studies and reports that have shown that the implementation of inclusive education remains a challenge in South Africa. This has been contributed to a lack of adequate training, insufficient resources and unsatisfactory support services [e.g., Department of Basic Education (DBE), 2015; Makhalemele and Nel, 2016, 2021; Equal Education Law Centre (EELC), 2021].

Although in-service training workshops regarding inclusive education have been and still is provided by the DBE the participants deemed this as inadequate to effectively prepare them for the implementation of inclusive education. The participants asserted that they need more workshops on how to identify and support learners with different barriers to learning and development. Other studies confirm that in-service training programs are not sufficient for teachers to be fully equipped with knowledge on inclusive education, as well as practical skills on how to address a diverse range of barriers by for example being able to differentiate the curriculum and using a variety of instructional strategies (International Disability and Development Consortium (IDDC), 2013; Spaan et al., 2022; Wray et al., 2022). Ross-Hill (2009) asserts that not offering frequent and substantial training brings about tension, stress, and strain for teachers in inclusive settings. Moreover, the participants recommended that the workshops should be a more interactive learning experience, instead of the presenters' only reading from notes. In addition, a need for more practical demonstrations in place of only providing documents and expecting teachers to read it on their own, was asserted by the participants. Interactive learning is well-documented as a strategy to increase confidence in one's own capabilities (Roldán et al., 2021).

Incompetent Department of Basic Education (DBE) officials were mentioned as a source of frustration and demotivation for the participants, preventing them from being successful in the implementation of inclusive education. The District Based Support Teams (DBST) was specifically reported as not providing adequate and sufficient support to teachers to assist them with learners who experience barriers to learning. It seems that the participants felt that the DBST members lack knowledge about inclusion. This results in them not trusting the DBST to provide adequate support and build their capacity in being efficient inclusive teachers. These findings are supported by other studies, namely Makhalemele and Nel (2016, 2021), as well as Nel et al. (2016), who found that many DBST's and School Based Support Teams (SBST) are not functioning efficiently. Furthermore, limited available professional support services such as psychologists and other health professionals frustrate the participants. They asserted a dire need for the availability of such human resources, since they believe they are not able to provide all the expert support that some disabilities require. This seems to add to teachers' feelings of demotivation and despondency, affecting their sense of self-efficacy.

In addition to the participants not receiving sufficient support from departmental officials, they also indicated that their work and

achievements are not acknowledged by their own school management team. The participants felt that they needed to be more individually recognized for their qualities and contributions to teaching and conveyed that in many instances they do not receive the credit that that they deserve from the school management. Ting and Yeh (2013) found that when given gratitude, it has positive effects on teachers' trust, satisfaction and commitment, but not being appreciated result in teachers feeling neglected, demotivated and dissatisfied in their job. Another concern mentioned by the participants, with regard to senior personnel at the school, is that they are not competent to deal with inclusive education, and consequently their management thereof is not acceptable. Causton and Theoharis (2013) confirm that incompetent leaders can destructively affect teachers' performance. Contrary, when management teams are well-qualified, teachers seem to feel more trusted and secure in their work (Wahlstrom, 2008). This was apparent when one participant mentioned she respected her principal more because of his post graduate qualification. She supposed that this made him more knowledgeable. The Human Science Research Council [Human and Social Science Research Council (HSRC), 2005] found that these kinds of systemic practices where teachers' are not acknowledged are some of the main reasons why they want to leave the system. Consequently, effective, competent and supportive leaders and managers are key dimensions in ensuring that teachers will experience a sense of self-efficacy in an inclusive classroom (Savolainen and Häkkinen, 2011).

It emerged from the findings that the participants' sense of self-efficacy appears to also be affected negatively by continuously changing curriculums, as well as the curriculum constraints that are placed on them. Lilyquist (2013) confirms that ever-changing expectations result in teachers feeling confused. Current curriculum constrictions, such as prescriptive requirements for completion of the curriculum (CAPS) and limited flexibility (with regard to time frames and lesson plans) are emphasized by the participants as limiting them from addressing diverse learning needs. These concerns are confirmed in research by Booysen (2018) and Engelbrecht et al. (2017) which found that a prescriptive approach to policy requirements restricts teachers from being flexible to address their own learners' context and needs. A key principle of inclusive education is that curriculum implementation should be flexible with regard to teaching methods, assessment, and pace of teaching, as well as the development of learning material (Department of Education (DoE), 2001). The pressure to complete the curriculum (also called "*curriculum coverage*" by the participants) within certain time limits constrain teachers to thoroughly address learners', who experience barriers to learning, needs (Msibi and Mchunu, 2013).

A lack of resources was reported as a major factor that disable teachers in their attempts to implement inclusive education effectively. The absence of resources such as adapted physical facilities for learners with physical disabilities or teaching aids for learners with visual, hearing or learning impairments, as well as appropriate learning material, place an extra burden on teachers and could create stress for both the learner and the teacher in an inclusive classroom.

Teacher colleagues who do not share the same positivity and passion about inclusive education made the participants feel negative, demotivated and as if they are working in isolation. They felt that better cooperation between colleagues in terms of planning and sharing personal experiences would be developmental and enhance self-efficacy. Maika (2012), as well as Romi and Leyser (2006), affirm that when peers at the same school are on different paths regarding a variety of implementation issues, it can result in teachers feeling isolated and negative. Pajares (2009) explains that teachers' self-efficacy can be positively or negatively influenced by the behavior of colleagues who teach with them. If one teacher colleague is, for instance, negative about inclusion, there is a strong possibility that he/she can cause the same reaction or attitude among other teachers that he/she is working closely with (Igbokwe Uche et al., 2014). Furthermore, teachers who are working together, but do not share common ideas, creates separation, which can lead to individual functioning (Robbins, 2005). However, healthy collaborative partnerships will lead to improved teacher self-efficacy, since a sense of support and interdependency is created (Romi and Leyser, 2006; Maika, 2012). Yet, the participants suggested, for this to materialize opportunities have to be purposefully created where teachers could talk and interactively learn from one another. Interactive interpersonal opportunities can involve open discussions where teachers talk and effectively learn from one another, where strengths in one another are identified, and encouragement from other colleagues is given and received. This could contribute to personal development and the enhancement of self-efficacy.

Parents' lack of involvement has also been reported as having a disabling influence in teachers feeling less self-efficient. Active involvement of parents in the teaching and learning process of their children is fundamental to effective learning and development (Sapungan and Sapungan, 2014). The lack thereof places an enormous load on teachers in addressing the needs of learners, especially when they experience barriers to learning. Ting and Yeh (2013) found that gratitude from parents to teachers is an essential component in building relationships and effective teaching.

Overcrowded classrooms are seen by the participants as an elemental factor in disabling teachers' self-efficacy to effectively implement inclusive education. South African school classrooms are overpopulated (Matsepe et al., 2019). It is consequently difficult for teachers to manage class discipline, while also dealing with every learner's learning needs. The participants reported that in order to support learners who experience barriers to learning, they will give these learners more attention and as a result neglect the other learners. They will then feel as if they themselves are the barrier to those learners who learn faster.

Discouraging external factors, such as the media and society, were also asserted as factors disabling the participants' self-efficacy. They felt that the media and general society mostly criticize teachers instead of recognizing the important contributions they are making in the education of learners. This adds to a feeling of demotivation. The participants reported that the media shape a misleading impression of teachers and this makes teachers feel under-appreciated. Disrespectful and false perceptions by the society, such as a disregard for teaching as a profession, viewing teaching as an easy course leading to a half day job also made the participants feel as if they were not trusted by the community. Aspfors et al. (2019) confirm that teachers are feeling that their jobs are not considered a profession. It was emphasized by the participants that it seems as if teachers, instead of the system, are mainly and unfairly blamed by society for everything that goes wrong in education when learners do not perform well on an academic level. It is affirmed by Perold et al. (2012) that South African teachers widely receive negative media publicity and is often held responsible for the failure of educational inventions, which are displayed in the underperformance of learners. Yan (2009) declares that negative statements from the media as well as destructive perceptions from society, are primary causes of teacher demotivation.

Conclusion

Education White Paper 6 affirmed that teachers need to play a central role in ensuring that inclusive education is successfully implemented in South Africa (Department of Education (DoE), 2001). Thus, teachers having a positive sense of self-efficacy is essential to ensure that a FSS functions effectively and fully as an inclusive school, as it is intended to. However, it is evident from the findings of this study that there are several factors that seem to disable their sense of self-efficacy, some of which is external and others internal. The external factors (such as inadequate training, the ineffective functioning of the department of basic education, the school management team not being supportive and competent, curriculum constraints, poor involvement of parents, limited and inadequate resources, large classroom numbers and even the media) appear to be mostly systemic. It can be assumed that all these external factors mentioned by the participants are directly linked to the education department's struggle to ensure a fully and efficient functional inclusive education system. A plethora of studies (e.g., Schoeman, 2012; Douglas et al., 2021; Walton and Engelbrecht, 2022, etc.) and official reports (e.g., Department of Basic Education (DBE), 2015) highlighted that the South African education system have not yet achieved the goal of EWP6 (Department of Education (DoE), 2001) to foster the development of inclusive and supportive centers of learning for all learners, especially in FSS. Thus, these external systemic factors reportedly disabling teachers' sense of self-efficacy could have a serious negative effect on their sense of agency. A central premise of Bandura's self-efficacy theory is that persons strive for a sense of agency, or the belief that they can control a significant degree of influence over important events in their lives (Schunk and DiBenedetto, 2020).

Consequently, within the afore-mentioned challenging education environment, over which FSS teachers feel that they have little control, an enormous responsibility is placed on their shoulders to be successful and efficient in addressing a range of learning needs in one classroom and support learners who experience barriers to learning, while trying to develop and sustain a positive sense of self-efficacy. The impact thereof is seen in the internal factors reported by the participants as disabling their sense of self-efficacy. These include being on different paths than peers resulting in them feeling isolated, a lack of knowledge and skills, a lack of confidence in their own teaching, and they even went as far as seeing themselves as a barrier to learners' progress, as well as experiencing physical and psychological problems. These mentioned internal disabling factors are critical to take note of as it influences the self-perceptions that teachers hold about their capabilities to learn or to perform courses of action at designated levels (Pajares, 2009). Bandura (2006) affirmed that efficacy beliefs determine how environmental opportunities and obstacles are perceived, affecting the choice of activities, how much effort is expended on an activity, and how long people will persevere when confronting stumbling blocks.

It is therefore vital that the basic and higher education departments of education are aware of the identified disabling factors and purposefully improve the external, systemic factors, while ensuring that FSS teachers' capabilities are developed and sustained in in-service and pre-service teacher education. This could contribute to developing and improving their sense of self-efficacy, but importantly also their physical and psychological wellbeing. Increasing growth and belief in capabilities while developing positive thinking patterns will augment self-confidence and the ability to control the surrounding environment. This could assist in carrying out daily pressures with more confidence and belief in oneself which tend to lead to improved psychological well-being (Alkhatib, 2020).

Data availability statement

The original contributions presented in the study are publicly available. This data can be found at: https://repository.nwu.ac.za/handle/10394/16540.

Ethics statement

The studies involving human participants were reviewed and approved by Human and Social Sciences Research Ethics Committee. The patients/participants provided their written informed consent to participate in this study.

Author contributions

IVS-P wrote the article and collected the data. MN co-wrote and edited the article. All authors contributed to the article and approved the submitted version.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

Alkhatib, M. A. H. (2020). Investigate the relationship between psychological well-being self-efficacy and positive thinking at prince Sattam bin Abdulaziz university international. *J. High. Educ.* 9, 138–152. doi: 10.5430/ijhe.v9n4p138

Aspfors, J., Eklund, G., and Hansén, S. E. (2019). Early career teachers' experiences of developing professional knowledge - from research-based teacher education through five years in the profession. *Nordisk Tidskrift för Allmän Didaktik* 5, 2–18.

Association for Qualitative Research. (2012). *Objectivity in Qualitative Research*. Cambridge, UK: Davey House.

Ayaya, G., Makoelle, T. M., and Van Der Merwe, M. (2021). Developing a framework for inclusion: a case of a full-service school in South Africa. *Int. J. Qual. Stud. Educ.*, 1–19. doi: 10.1080/09518398.2021.1956616

Bandura, A. (1994). "Self-efficacy" in *Encyclopaedia of Human Behavior*. ed. V. S. Ramachaudran (New York, NY: Academic Press), 71–81.

Bandura, A. (1997). *Self-Efficacy: The Exercise of Control*. New York, NY: W. H. Freeman. 604 p.

Bandura, A. (2006). "Guide for constructing self-efficacy scales" in *Self-Efficacy Beliefs of Adolescents*. eds. F. Pajares and T. Urdan (Greenwich, CT: Information Age Publishing), 307–337.

Booysen, R. M. (2018). The perspectives of secondary school teachers regarding the flexible implementation of the curriculum assessment policy statement. Unpublished Master's dissertation. Vanderbijlpark: North-West University.

Butler-Kisber, L., and Poldma, T. (2010). The power of visual approaches in qualitative inquiry: the use of collage making and concept mapping in qualitative research. *J. Res. Pract.* 6:Article M18

Causton, J., and Theoharis, G. (2013). *The Principal's Handbook for Leading Inclusive Schools*. Baltimore: Paul H Brookes Publishing.

Clipa, O. (2017). "Teacher stress and coping strategies" in *Studies and current trends in science of education*. ed. O. Clipa (Suceava, Romania: LUMEN Proceedings), 120–128.

Cobern, W. W., and Adams, B. A. J. (2020). When interviewing: how many is enough? *Int. J. Assess. Tools Educ.* 7, 73–79.

Creswell, J. W. (2012). *Educational Research: Planning, Conducting and Evaluating Quantitative and Qualitative Research. 4th Edn.* New York, NY: Pearson. 673 p.

Crothers, L. M., Hughes, T. L., and Morine, K. A. (2008). *Theory and Cases in School-Based Consultation: A Resource for School Psychologists, School Counsellors, Special Educators, and Other Mental Health Professionals*. London, United Kingdom: Routledge.

De Oliviera Fernandez, A. P., Ramos, M. F. H., Costa e Silva, S. S., Fernando, K. C. F. N., and Pontes, A. R. (2016). Overview of research on teacher self-efficacy in social cognitive perspective. *Anales de psicología* 32, 793–802. doi: 10.6018/analesps.32.3.220171

Department of Basic Education (DBE). (2015). *Report on the Implementation of Education White Paper 6 on Inclusive Education: An Overview for the Period 2013–2015*. Pretoria: Sol Plaatjie House.

Department of Education (DoE). (2001). *Education White Paper 6: Special Needs Education (Building an Inclusive Education and Training System)*. Pretoria: DoE.

Devi, A., and Ganguly, R. (2022). Pre-service teachers' and recent teacher graduates' perceptions of self-efficacy in teaching students with autism Spectrum disorder – an exploratory case study. *Int. J. Incl. Educ.*, 1–17. doi: 10.1080/13603116.2022.2088869

Douglas, A., Walton, E., and Osman, R. (2021). Constraints to the implementation of inclusive teaching: a cultural historical activity theory approach. *Int. J. Incl. Educ.* 25, 1508–1523. doi: 10.1080/13603116.2019.1620880

El-Sayed, S. H., El-Zeiny, H. H. A., and Adeyemo, D. A. (2014). Relationship between occupational stress, emotional intelligence, and self-efficacy among faculty members in faculty of nursing Zagazig University, Egypt. *J. Nurs. Educ. Pract.* 4, 183–194. doi: 10.5430/jnep.v4n4p183

Engelbrecht, P., Savolainen, H., Nel, M., Koskela, T., and Okkolin, M.-A. (2017). Making meaning of inclusive education: classroom practices in Finnish and south African classrooms. *Compare: J. Comp. Int. Educ.* 47, 684–702. doi: 10.1080/03057925.2016.1266927

Equal Education Law Centre (EELC). (2021). A 20-year review of the regulatory framework for inclusive education and its implementation in South Africa. EELC. Available at https://eelawcentre.org.za/wp-content/uploads/ie-report-let-in-or-left-out.pdf

Griful-Freixenet, J., Struyven, K., and Vantieghem, W. (2021). Exploring pre-service teachers' beliefs and practices about two inclusive frameworks: universal Design for Learning and differentiated instruction. *Teach. Teach. Educ.* 107:103503. doi: 10.1016/j.tate.2021.103503

Guskey, T. R., and Passaro, P. D. (2012). Teacher efficacy: a study of construct dimensions. *Am. Educ. Res. J.* 31, 627–643. doi: 10.3102/00028312031003627

Human and Social Science Research Council (HSRC). (2005). The health of our educators: a focus on HIV/AIDS in south African public schools. Report to ELRC. Centurion: Human Science Research Council.

Igbokwe Uche, L., Mezieobi, D. I., and Callistus, N. E. (2014). Teachers' attitude to curriculum change: Implications for inclusive education in Nigeria. *Res. Humanit. Soc. Sci.* 4, 92–100.

International Disability and Development Consortium (IDDC). (2013). Teachers for All: Inclusive Teaching for Children with Disabilities. Available at: https://www.eenet.org.uk/resources/docs/IDDC_Paper_Teachers_for_all.pdf

Klassen, R. M., and Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: teacher gender, years of experience, and job stress. *J. Educ. Psychol.* 102, 741–756. doi: 10.1037/a0019237

Kosko, K. W., and Wilkins, L. M. (2009). General educators' in-service training and their self-perceived ability to adapt instructions for students with IEPs, Virginia Polytechnic Institute & State University Teacher Training and inclusion. *Prof. Educ.* 33, 1–10.

Lilyquist, J. G. (2013). *Are Schools Really Like This? Factors Affecting Teacher Attitude Toward School Improvement*. Berlin: Springer Science & Business Media, 91.

Liu, X., Peng, M. Y. P., Answer, M. K., Chong, W. L., and Lin, B. (2020). Key teacher attitudes for sustainable development of student employability by social cognitive career theory: the mediating roles of self-efficacy and problem-based learning. *Front. Psychol.* 11:1945. doi: 10.3389/fpsyg.2020.01945

Lynch, M. (2019). How bad education policies demoralize teachers. The Edvocate. Available at: https://www.theedadvocate.org/how-bad-education-policies-demoralize-teachers/

Maika, K. (2012). Teacher self-efficacy and successful inclusion: Profiles and narratives of eight teachers. MEd-of Art: Thesis. Canada: Concordia University.

Makhalemele, T., and Nel, M. (2016). Challenges experienced by district-based support teams in the execution of their functions in a specific south African province. *Int. J. Incl. Educ.* 20, 168–184. doi: 10.1080/13603116.2015.1079270

Makhalemele, T., and Nel, M. (2021). Investigating the effectiveness of institutional-level support teams at full-service schools in South Africa. *Support Learn.* 36, 296–315. doi: 10.1111/1467-9604.12356

Matsepe, D., Maluleke, M., and Cross, M. (2019). Re-imagining teacher's experience with overcrowded classrooms in the public secondary schools in South Africa. *J. Gender Inf. Dev. Africa (JGIDA)* 8, 91–103.

McMillan, J., and Schumacher, S. (2014). *Research in Education Evidence-Based Inquiry*. (*7th Ed.*). Essex: Pearson Ltd.

Memisevic, H., Dizdarevic, A., Mujezinovic, A., and Djordjevic, M. (2021). Factors affecting teachers' attitudes towards inclusion of students with autism spectrum disorder in Bosnia and Herzegovina. *Int. J. Incl. Educ.*, 1–17. doi: 10.1080/13603116.2021.1991489

Merriam, S. B. (2009). *Qualitative Research: A Guide to Design and Implementation*. San Francisco: Jossey-Bass. 293 p.

Msibi, T., and Mchunu, S. (2013). The knot of curriculum and teacher professionalism in post-apartheid South Africa. *Educ. Change* 17, 19–35. doi: 10.1080/16823206.2013.773924

Nel, M. (2020). *Inclusive and special education in Africa. Oxford Research Encyclopaedia*. Oxford: Oxford University Press.

Nel, M., Nel, N. M., and Hugo, A. (2022). "Inclusive education: an introduction" in *Learner Support in a Diverse Classroom*. eds. M. Nel, N. M. Nel and M. Malindi (Pretoria: Van Schaik), 3–40.

Nel, N. M., Tlale, L. D. N., Engelbrecht, P., and Nel, M. (2016). Teachers' perceptions of education support structures in the implementation of inclusive education in South Africa. *KOERS—Bull. Christian Scholarsh.* 81, 17–30. doi: 10.19108/KOERS.81.3.2249

Organisation for Economic Co-operation and Development (OECD). (2009). Creating Effective Teaching and Learning Environments: First Results from TALIS. OECD Publishing. Available at: https://www.oecd.org/education/school/43023606.pdf

Pajares, F. (2009). "Toward a positive psychology of academic motivation: the role of self-efficacy beliefs" in *Handbook of Positive Psychology in Schools*. eds. R. Gilman, E. S. Huebner and M. J. Furlong (New York: Taylor & Francis), 149–160.

Perold, M., Oswald, M., and Swart, E. (2012). Care, performance and performativity: portraits of teachers' lived experiences. *Educ. Change* 16, 113–127. doi: 10.1080/16823206.2012.692208

Prinsloo, E., and Gasa, V. (2016). "Addressing challenging behaviour in the classroom" in *Addressing barriers to learning: A South African perspective*. eds. E. Landsberg, D. Kruger and E. Swart. *3rd* edn (Pretoria: Van Schaik), 543–564.

Robbins, S. P. (2005) *Essentials of organizational behavior*. *8th Edition*, Pearson Education Inc., Prentice Hall.

Roldán, M. S., Marauri, J., Aubert, A., and Flecha, R. (2021). How inclusive interactive learning environments benefit students without special needs. *Front. Psychol.* 12:661427. doi: 10.3389/fpsyg.2021.661427

Romi, S., and Leyser, Y. (2006). Exploring inclusion pre-service training needs: a study of variables associated with attitudes and self-efficacy beliefs. *Eur. J. Spec. Needs Educ.* 21, 85–105. doi: 10.1080/08856250500491880

Ross-Hill, R. (2009). Teacher attitudes towards inclusion practices and special needs students. *J. Res. Spec. Educ. Needs* 9, 188–198. doi: 10.1111/j.1471-3802.2009.01135.x

Ryan, A., and Mathews, E. S. (2022). Teacher self-efficacy of primary school teachers working in Irish ASD classes. *Eur. J. Spec. Needs Educ.* 37, 249–263. doi: 10.1080/08856257.2021.1872996

Sapungan, G. M., and Sapungan, R. M. (2014). Parental involvement in child's education: importance, barriers and benefits. *Asian J. Manag. Sci. Educ.* 3, 42–48.

Savolainen, T., and Häkkinen, S. (2011). Trusted to lead: trustworthiness and its impact on leadership. Technology innovation. *Manag. Rev.*

Savolainen, H., Engelbrecht, P., Nel, M., and Malinen, O.-P. (2012). Understanding teachers' attitudes and self-efficacy in inclusive education: Implications for pre-service and in-service teacher education. *Eur. J. Spec. Needs Educ.* 27, 51–68. doi: 10.1080/08856257.2011.613603

Savolainen, H., Malinen, O. P., and Schwab, S. (2022). Teacher efficacy predicts teachers' attitudes towards inclusion – a longitudinal cross-lagged analysis. *Int. J. Incl. Educ.* 26, 958–972. doi: 10.1080/13603116.2020.1752826

Schoeman, M. (2012). "Developing an inclusive education system: changing teachers' attitudes and practices through critical professional development" in *Paper presented at the National Teacher Development Conference at the University of Pretoria*, 17–19.

Schunk, D. H., and DiBenedetto, M. K. (2020). Motivation and social cognitive theory. *Contemp. Educ. Psychol.* 60:101832. doi: 10.1016/j.cedpsych.2019.101832

Sharma, U., Loreman, T., and Forlin, C. (2012). Measuring teacher efficacy to implement inclusive practices. *J. Res. Spec. Educ. Needs* 12, 12–21. doi: 10.1111/j.1471-3802.2011.01200.x

Shulman, R. (2013). Unhappy and exhausted teachers: How and why everyone is affected. EdNews Daily. Available at: http://www.ednewsdaily.com/unhappy-and-exhausted-teachers-how-and-why-everyone-is-affected/.

Skaalvik, E. M., and Skaalvik, S. (2010). Teacher self-efficacy and teacher burnout: a study of relations. *Teach. Teach. Educ.* 26, 1059–1069. doi: 10.1016/j.tate.2009.11.001

Spaan, W., Oostdam, R., Schuitema, J., and Pijls, M. (2022). Analysing teacher behaviour in synthesizing hands-on and minds-on during practical work. *Res. Sci. Technol. Educ.*, 1–18. doi: 10.1080/02635143.2022.2098265

Temiz, T., and Topcu, M. S. (2013). Preservice teachers' teacher efficacy beliefs and constructivist-based teaching practice. *Eur. J. Psychol. Educ.* 28, 1435–1452. doi: 10.1007/s10212-013-0174-5

Ting, S. C., and Yeh, L. Y. (2013). Teacher loyalty of elementary schools in Taiwan: the contribution of gratitude and relationship quality. *School Leadersh. Manag.* 34, 85–101. doi: 10.1080/13632434.2013.813453

Van Mieghem, A., Struyf, E., and Verschueren, K. (2022). The relevance of sources of support for teachers' self-efficacy beliefs towards students with special educational needs. *Eur. J. Spec. Needs Educ.* 37, 28–42. doi: 10.1080/08856257.2020.1829866

Van Schalkwyk, G. J. (2010). Collage life story elicitation technique: a representational technique for scaffolding autobiographical memories. *Qual. Rep.* 15, 675–695. doi: 10.46743/2160-3715/2010.1170

Wahlstrom, K. L. (2008). How teachers experience principal leadership: the roles of professional community, trust, efficacy, and shared responsibility. *Educ. Adm. Q.* 44, 458–495. doi: 10.1177/0013161X08321502

Walton, E., and Engelbrecht, P. (2022). Inclusive education in South Africa: path dependencies and emergences. *Int. J. Incl. Educ.*, 1–19. doi: 10.1080/13603116.2022.2061608

Wood, L., and Olivier, T. (2010). *Increasing the Self-Efficacy Beliefs of Life Orientation Teachers: An Evaluation*. Port Elizabeth: Faculty of Education Nelson Mandela Metropolitan University, 161–179.

Wray, E., Sharma, U., and Subban, P. (2022). Factors influencing teacher self-efficacy for inclusive education: a systematic literature review. *Teach. Teach. Educ.* 117:103800. doi: 10.1016/j.tate.2022.103800

Yan, H. (2009). Student and teacher de-motivation in SLA. *Asian Soc. Sci.* 5, 109–112. doi: 10.5539/ass.v5n1p109

Zee, M., and Koomen, H. M. Y. (2016). Teacher self-efficacy and its effects on classroom processes, student achievement adjustment, and teachers well-being: a synthesis of 40 years of research. *Rev. Educ. Res.* 86, 981–1015. doi: 10.3102/0034654315626801

Zimmerman, B. J., and Cleary, T. J. (2006). "Adolescents' development of personal agency" in *Adolescence and Education (Vol. 5): Self-Efficacy Beliefs of Adolescents*. eds. F. Pajares and T. Urdan (Greenwich, CT: Information Age Publishing), 45–69.

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Prospects for applying a theory of change model to the use of research evidence in autism education

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Educators and educational researchers show continued interest in how schools can best make use of research evidence in bringing about change in practice in schools. A number of models have been developed to support schools in this challenge, such as research learning communities and lesson study. However, questions remain about the effectiveness of such models, their fit to the particular needs of schools and the extent to which they contribute meaningfully to the body of evidence used to inform changes to practice within the field of education. This issue is of particular relevance when considering the inclusion of autistic children in the classroom partly because of the large body of research being undertaken on autism across a range of domains with varying epistemological perspectives (e.g., neuroscience, psychology, pedagogy) and partly due to the widespread need to support autistic children in the classroom. Questions have also been raised about the evidence policy "agenda," particularly in terms of reliance on positivist models centered on randomized controlled trials. These concerns focus on the extent to which performative or neoliberal perspectives on effectiveness might mask the complexity of how practice and knowledge (or evidence) are related in models of teacher professional working. One particular approach that could have potential in addressing these is that of Theory of Change (ToC). ToC models come from the field of theory-driven evaluation and draw on frameworks for relating practice to knowledge such as realist evaluations whereby the evaluation focuses on understanding how complex programs work in specific contexts by examining the mechanisms that lead to particular outcomes. ToC models consider under what conditions, for whom, and for what reasons or aims a given activity will achieve its intended outcomes. This paper considers the scope for the application of ToC models by reviewing a selected case from a completed study on the implementation of models for developing evidence informed practice in schools for autism education. By applying a ToC lens to what did happen in this case, we will "re-imagine" this case from a ToC perspective. This approach will serve to illustrate the possibilities for how ToC models could be used in future practice to advance evidence-informed practice in autism education.

KEYWORDS

theory of change, autism education, evidence-informed teaching, implementation science, inclusion

Introduction

There has been a growing focus on the use of evidence-informed practice in schools. Slavin (2020) review notes the increasing trend toward the use of evidence-informed approaches from both a macro policy perspective as well as more locally at district or school level in terms of approaches encouraging teachers to implement practices which could facilitate improvements in educational outcomes. This trend is at least partly based on the millions of pounds which have been spent on the design and implementation of interventions, often based on evidence derived from randomized control trials (RCTs), to address persistent challenges in education. In the UK, for example, the Education Endowment Foundation (EEF) has published 16 guidance reports and offers a Teaching and Learning Toolkit, comprising of research summaries for early years, school and post-16 settings and has funded "hundreds of experiments" (Thomas, 2021, p. 504). In the US, the What Works Clearing House initiative (NCEE, n.d.) has similarly produced a range of recommendations and reports, again mainly based on evidence from trials.

How schools can effectively engage with evidence-informed practice is a particular issue for special educational needs (SEN) and autism education (by which we mean the practice of schools and teachers with autistic children in mainstream and specialist settings, and the study of such practice). This is because of the particular focus of psychology and other disciplines such as psychiatry and neuroscience on amassing evidence about interventions for children with SEN and autism in particular (Mintz, 2022). Sweileh et al.'s (2016) bibliometric review of academic articles on autism demonstrated that many thousands of new papers are published each year on this topic. Although this exercise has not been repeated more recently, it is likely that the numbers have increased further still. Autism's positioning as a "quasi-psychological" or "quasi-health" condition that straddles education and health (see Mintz et al., 2012) means that the issue of what evidence to use and how to use it is particularly acute in respect of autism education.

There are of course long-standing debates about different types of evidence and how we can demonstrate causality in social science and education. The use of RCTs is premised on the idea that randomized designs can minimize the impact of confounding variables and thus make it clear whether a particular intervention had a causal effect on outcomes. In contrast, theory driven evaluation is based on the contrasting premise that causality in social contexts is complex and emphasizes the importance of developing a rich understanding of the underlying mechanisms and contextual factors which might influence the link between interventions and outcomes (Johnson et al., 2007). In this paper, we will explore the role of such theory-driven evaluation in relation to how schools can engage with evidence-informed practice in schools. We do this via discussion of the experience of implementing an intervention "MARAT" (Making Autism Research Accessible to Teachers) with seven primary schools in the London area.

As noted, there are a some concerns about a simplistic reliance on RCT evidence as a "gold standard." These can be considered in two categories. Firstly, there are epistemological concerns (i.e., concerns about the approach to how we can best understand something) as to whether RCTs do in fact represent an effective way of deriving knowledge about complex social systems such as schools. Secondly, if RCTs are admitted as an epistemologically sound source of knowledge to guide teacher practice in schools., there are concerns about how the knowledge derived from a trial can in fact effectively be translated from the "lab" to the real-world context of different schools with different local contexts and actors. In this paper, we consider both categories of concern, but our main focus is on the latter category, i.e., considering how methods of adaptation to local context, particularly using Theory of Change (ToC) models, could help schools in the implementation of evidence-informed practices.

In terms of the first category of concern, i.e., what counts as evidence in making such recommendations about which interventions should be adopted by schools and educators, a number of theorists have raised objections. Biesta (2007) in particular has criticized the focus on the use of experimental approaches such as RCTs as a primary source of evidence for "what works" in education. Thomas (2021) presents a similar critique and notes that the large-scale fair test approach underpinning RCTs is not the only way to establish causation, i.e., what it is that makes a difference, in this case, in influencing different educational outcomes. Thomas notes that in scientific fields such as geology and paleontology, theorists work with a range of evidence including direct observation and simple deductive inference to deduce the best likely explanation for causation—"from the intelligent examination of evidence, theory about cause is built and rejected or refined and ultimately accepted" (p. 507). Thomas thus argues that it is possible to draw valid conclusions without the use of controlled experimentation and that even well-controlled studies are "as vulnerable to distortion" (p. 513) as any other type of enquiry.

The implication of critiques such as this is to raise the possibility of a more important role for what might be termed co-constructed, ecologically responsive research in education. This could include the long tradition of schools engaging in their own small-scale enquiries (Stenhouse, 1981; Stoll and Louis, 2007; Brown, 2015), where the causal chain is demonstrably complex but is crucially explored locally, aiming toward the deduction of the best likely explanation for causation. The counterargument, of course, and the explicit rationale for the emphasis on experimental approaches such as RCTs in social science and education, is that such small-scale localized studies present issues of validity and generalizability (see for example Gage, 1989). Part of Thomas' (2021) response is that such a position masks the complexity and responsiveness to different types of evidence that can be counted as a scientific method in many scientific fields. A parallel response is that given in the teacher research (see Cochran-Smith and Lytle, 1999) and teacher reflective practice (e.g., Pollard et al., 2014) literature, which explores alternative conceptualizations of validity. Focusing on case study research, Yin (2003, p. 34) describes three types of validity: construct validity (establishing the correct model); internal validity (relevant only to case studies which investigate causal relationships) and external validity (which refers to the accurate establishment of the domain to which the case study results can be generalized). Yin (2003) argues that a different type of generalization than that used in statistical analysis enables case-studies to establish their validity. Instead, Yin describes an "analytical generalization" with different features than the more traditional "statistical generalization." In analytical generalization, one aims to generalize a particular set of results to a more general theory. Yin discusses the example of Jacob's (1961) seminal study of urban planning. This focused on experiences from one "case"—New York City, which are used to build a broader theory of urban planning covering issues such as the role of sidewalks, green spaces, and the need for mixed use in city design. Thus, it is the quality of the analysis

rather than the representative nature of a sample size which might be regarded as the determining factor in establishing case study research validity.

Our argument in this paper is that one way school's might be able to achieve such quality of analysis in relation to meeting the needs of their own students with SEN, could be via the explicit adoption of a theory of change model. We should also note that we see this happening in two different ways. Firstly, such analytical generalization could be within the school. That is, local action research, which could be based on the local implementation of evidence-based and/or evidence-informed practices, might first be undertaken in the school in one class, or one year group. The knowledge/theory development gained from that experience might then be generalized to other classes within the school or across the school as a whole. Secondly, there could also be external analytical generalization which might involve knowledge/theory development gained being generalized, as in the example from Yin above, to other schools. In either case, where the initial novel intervention or practice was based on external evidence such as the results of RCT trials, such an approach can be considered as a way of addressing the second category of concern about RCTs and evidence noted above. Thus, analytical generalizability could be used as a framework for considering how evidence from RCTs could effectively be adapted for implementation in local contexts. Introducing ToC models into the ways in which schools address the implementation of such evidence is a potential way to further support generalizing a particular set of results to a local theory that fits to the needs of individual schools. In respect of evidence-informed practice, this approach might also offer a deeper understanding of underpinning theory to support reflective practice and data collection.

We should note at this point that the debates outlined above are to some extent expressed in the use of different terms to describe the use of evidence both in the field of education and more widely. Evidence-based practice or practices (EBPs) typically refers to specific, structured programs, often, but not necessarily commercially available which have been tested for efficacy, usually through randomized controlled trials or quasi-experiments (Odom et al., 2014). This is differentiated from evidence-informed practice which can be understood as activities which are empirically supported, but have not necessarily been formally evaluated. The term evidence-informed practice also tends to reflect researcher and practitioner engagement with and acknowledgement of the complexities of a school environment (Nelson and Campbell, 2017). Our positioning is that evidence-informed is a more appropriate and useful way of thinking about the use of research evidence in schools, however both terms are employed in this paper, and we use EBP particularly when that is the term used by authors of studies that we discuss.

Theory of change

Ghate (2018) considers a ToC as connecting what a new intervention or practice does with its intended outcomes, with an explanation of why and how the change introduced brings about or could bring about those outcomes. For Chen (2016), ToC indicates the small steps which together achieve a longer-term aim or outcome, the connections and assumptions between individual intervention steps or activities and the links to what happens next after that activity (i.e., the intended outcome) as the overall intervention progresses. A ToC model considers importantly the assumptions and pre-conditions in relation to those explanations or explanatory factors which link what is done to the intended or hoped for outcomes. ToC models are widely used in evaluations of social enterprises particularly by voluntary or third sector organizations. For example, the National Council for Voluntary Organisations in the UK has a toolkit for developing a ToC model (see NCVO, n.d.) A ToC approach is also commonly used in the health sector, such as in the design and implementation of public health interventions (Breuer et al., 2018), implementing quality improvement interventions for primary care in Australia (Schierhout et al., 2013) or in implementing child health service interventions (Jones et al., 2022). Ghate (2018) argues, citing UK Medical Research Council guidance (Moore et al., 2015), that there is broad consensus in the health field on the importance of understanding the underlying theory of intervention in both implementing and evaluating the roll out of interventions.

A ToC usually will have a logic model or models, the purpose of which is to describe how resources and activities (i.e., what actors in the system will do differently) are designed to achieve the goals of the intervention or program, and how specifically they will bring about change (Kellogg Foundation, 2004; PCAR, 2018; NCVO, n.d.). A logic model usually includes a description of the situation (the problem or issue to be addressed); the resources available in terms of people and relevant infrastructure that will contribute toward activities (what people will actually do) in the program; outputs, which are the services provided which will reach targeted participants—usually children in education programs; and outcomes—the benefits for the participants arising from the activities (PCAR, 2018). Another element is the consideration of assumptions—often these are about the beliefs and attitudes of actors in the system and how they are thought to react to changes. Thinking about assumptions is also meant to help identify gaps or elements where additional activities may need to be inserted to bring about the expected outputs and outcomes (Kellogg Foundation, 2004). ToCs and the logic models that underpin them are developed usually through a collaborative process involving different actors in the system, both before and during the implementation of an intervention or program. It is this collaborative process of linking activities to outputs to outcomes, and in the thinking about how this relates to the local context and what needs to be adapted to meet that local context, that represents the potential of ToC models to make a difference in how well interventions are implemented in practice (Kellogg Foundation, 2004; NCVO, n.d.).

We now move on to considering a key approach in the field to considering how interventions link to practice and outcomes, namely implementation science.

Implementation science

There is already considerable attention in the field as to how evidence-based practices, usually derived from RCTs (as well as other pre and posttest designs such as ABA or ABAB studies), could be implemented in schools for autism education, with a particular focus on the potential role of implementation science in this.

Eccles and Mittman (2006, p. 1), defined Implementation Science (IS) as the "study of methods to promote the adoption and integration of evidence-based practices, interventions, and policies into routine care." The development of IS, across a range of public services, was a

reaction to the perception that although in many fields there was considerable scientific evidence available, it was unclear how that evidence could be translated into professional practice. IS frameworks aim to address this area. They focus on a number of areas including those that are specific to the internal specification of an intervention (or other evidence-based practice) such as treatment integrity (or fidelity) (see Sanetti et al., 2014). This can be seen as having 3 aspects—adherence, quality and exposure. Adherence is the extent to which an intervention is implemented as planned, quality is how well the intervention elements (or steps) are implemented, and exposure is the frequency and duration of the intervention. Thus, if a school only does an intervention once a week when it is intended to be every day, and the teachers do not follow the set out plan for the intervention and have a poor understanding of the techniques involved, treatment integrity will be low (at least as it was intended in the initial studies showing efficacy), and thus treatment integrity and subsequent impact from the intervention will be low. Models of IS also include consideration of wider elements outside of those related to the internal specification of an intervention. For example, the Exploration, Preparation, Implementation, and Sustainment (EPIS) model (Aarons et al., 2011) sets out an "ecology" of factors which surround and influence the implementation of an evidence-based practice. These are classified in to outer and inner contexts. Outer contexts include the sociopolitical framework, national or regional leadership in relation to policy, interorganizational networks, and the engagement of the intervention developer. Inner contexts include organizational characteristics including culture, local leadership styles and approaches, fiscal viability and resourcing, training, and fidelity and monitoring of activities and support. Models also usually have a linear aspect, moving from initial stages focused on introducing the intervention or practice to a new setting, through to later stages which focus on sustainability of use in the medium to longer term (see the review on IS models by Meyers et al., 2012). Such models then, clearly take into the account the need to position any intervention or practice in terms of how it might be interpreted and locally adapted by the social actors in a particular setting, and in fact one of the innovations, so to speak, of this aspect of IS, is its recognition that it is only through engagement with such local meaning-making that successful implementation might be achieved. Indeed, much of the literature is focused on identifying specific techniques and approaches to facilitate this (Schierhout et al., 2013). One way that this has been approached has been through the use of Theory of Change within IS. ToC has been considered in relation to IS in various fields including public health (Teachout et al., 2021), youth work (Moroney, 2020), and to a limited extent in education. One example of the use of ToC models in IS in education is Størksen et al.'s (2021) study of the rollout the results of an RCT study in early childhood education in Norway.

Some theorists working in the field such as Ghate (2018) have noted that it continues to be the case that many instances of the wider implementation of evidence-based approaches across social policy and health lack a fully articulated ToC (Davis et al., 2015). This is an aspect of effective implementation that is being increasingly recognized within IS (Ghate, 2018; Kainz and Metz, 2019). Such a focus, within the ToC approach, on understanding of local processes and local adaptation, points toward a tension with the more programmatic elements of models of IS, specifically those that focus on adherence to treatment fidelity. Kainz and Metz (2019) note explicitly that such an over emphasis on treatment fidelity could mean that those responsible for intervention implementation downplay or ignore the need for such local adaptation, i.e., for local actors to make sense of interventions in terms of their own existing frames of reference—their experiences, beliefs, limitations, and their motivations and wants (Heckman, 2005). The potential power of ToC, as Ghate (2018) argues, is partly in the way that it can help organizations set out the assumptions involved in moving from the introduction of an intervention to it having the expected impacts and outcomes. In education, some of those assumptions could and can relate to the ways in which teachers integrate (or do not integrate) new approaches into their existing classroom practice.

Implementation science, theory of change, and autism education

Echoing Ghate's (2018) concerns in relation to social science and health, our review of the literature indicated relatively little attention to the use of ToC either in relation to education for special educational needs more widely or in relation to autism education specifically. Smolkowski et al. (2019) in their overview of the use of IS in research on learning disabilities note that as a whole the field is still relatively under-developed. Their review also indicates that both in terms of the perspective of the review authors, and in terms of the perspectives of the authors of the individual studies considered, the focus is very much on implementation fidelity, and issues of local adaptation or of the potential role of ToC are not given any real consideration. A similar picture can be seen in relation to the significant work on IS and autism interventions, most of which has taken place in the last 10 years or so in the United States. Odom et al. (2020) set out the picture in the US on this topic with a particular focus on regional strategies to roll out EBPs for autism. For example, Odom et al. (2013) used the US National Implementation Research Network (NIRN) IS model to implement state-wide systems of professional development in relation to EBPS for autism and their evaluation indicated changes in the extent to which teachers effectively used EBPs.

At regional and national level in the US, The National Professional Development Center on ASD (NPDC) established, at district level, the Evidence-Based Individualized Program for Students with Autism (EPIBSA) (Odom et al., 2012), which aims to promote effective use of EBPs for autistic children by teachers. The model includes, in common with other IS framework models, a focus on measuring quantified outcomes as an indicator of overall implementation effectiveness, in this case goal attainment in relation to student functioning. As a linear model, EPIBSA starts with a state-wide leadership team, and then a 2-year plan for state-wide partnership with the NPDC. An implementation and autism training team then work with districts and schools on the selection, implementation and evaluation of selected EBPs. This is a resource intensive large-scale operation that involves NPDC staff in setting up and supporting statewide implementation teams and then such teams facilitating regular visits to schools, including extensive coaching in line with the NIRN IS model.

However, looking across the literature on the development of these national and local level approaches to the use of IS in autism education (e.g., Odom et al., 2013, 2014, 2020; NIRN, n.d.), there is very limited reference to the use of ToC within such models. In fact, when we searched on PSYCINFO and SCOPUS for the terms

"Implementation Science," "Autism" and "Theory of Change" we could find no substantive papers that had looked at the use of ToC as an element of IS in autism education. We note this particularly given the concerns noted in the wider literature on IS in social science, health and education, in relation to the tensions between approaches to IS that focused purely on implementation fidelity and approaches which take account of local factors and local adaptation. It is true that Odom et al. (2014) do refer to the concept of ToC in discussing the use of IS to implement a high school program for autism, but there is in fact no clear definition of a particular model of ToC or its use. In fact, it could be argued that the work of Odom and colleagues, as cited, tends to elide the complexities which are at play when conceptualizing evidence in the context of autism education (Mintz, 2022). We further note that within the current field of implementation science and its application to autism education, there seems to be a similar lack of attention to the local factors at play when taking EBPs developed under trial conditions and implementing them in the wider field.

Applying ToC in autism education: the place of programs to support schools in engaging with evidence-informed practice

We can conceptualize the application of ToC, in the context of the work of teachers and other professionals, to autism education in two distinct but still interrelated ways. Firstly, as we have discussed, ToC could be used, within the context of implementation science, to improve the effectiveness of the roll out of EBPs, such as in the work of the NPDC in the US. However, such programs are only one element of the "ecosystem" of how schools engage with research evidence and EBPs in autism education. Another important element to which ToC could be applied is in the context of the growth of "research informed school programs" to support schools in engaging with research evidence. These programs, in which schools use collaborative models within and between schools to foster engagement with research evidence are now very common in many educational systems. Examples include research school networks in England (Dixon et al., 2020), professional learning community models focused on research evidence engagement in India (Zahedi et al., 2021), knowledge networks in Canada (Cooper et al., 2017), and Evidence Based Community of Practice approaches in the US (Office of Elementary and Secondary Education, 2020). There has also been some limited attention to the specific use of such networks for developing teacher engagement with research related to special educational needs and inclusion (Mintz et al., 2021). The aim of such initiatives, in common with programs which use IS models to directly roll out EBPs, is indeed to get schools to engage with research evidence and to then implement new approaches across the school based on such engagement. Of course, it should be noted that with such research informed schools programs, schools are usually looking at a wide base of potential interventions and evidence sources, and making judgments as schools as to what types of evidence to use and how to apply this in their own local context. However, such use and implementation of evidence also could be considered as being appropriate for the application of ToC models. This is because a ToC model can provide a mechanism for schools to consider how a particular practice or intervention, with the evidence provided whether RCT or case study, can be made sense of and interpreted in terms of the local context and conditions, as well as providing a framework for both understanding and evaluating the factors which contribute to successful implementation in that local context. At the same time, a ToC approach, as noted, can also provide a framework for considering analytical generalizability—that is how the evidence from case studies undertaken in other schools can potentially be applied in *this* school. As well, such analytical generalizability could also be applied to considering how case studies (e.g., pilots of the use of interventions) undertaken within *this school* in a particular class could be potentially applied across the school more widely. From our review of the literature on the application of ToC models to education, this would be a new departure. Extant studies in education generally have tended to focus on the use of ToC models in the implementation of specific interventions or EBPs. For example, Thompson et al. (2020) used a ToC approach in the implementation and evaluation of an intervention to manage significant disruptive behavior in schools. Jocson and Martínez (2020) used a ToC model to consider ways of engaging high school students with career and technical education. Wijekumar et al. (2013) developed a ToC for the implementation of a web based intelligent tutoring system for elementary schools. However, our review indicated that no studies to date have formally considered how ToC models could be utilized in relation to research informed schools programs, whether for education generally or for special and educational needs specifically.

We will next show how, albeit retrospectively, a clear articulation of theory of change applied to one existing case study derived from a particular research informed schools program for autism education could help schools with the implementation of evidence informed approaches. "Making Autism Research Accessible to Teachers" (MARAT) was conceptualized as a knowledge exchange program based on the model of research learning communities (RLC) (Brown, 2017; Mintz et al., 2021). We use the experiences of one school and its use of this program to illustrate how a ToC model could potentially enable schools to describe their work more accurately, ensure greater focus on the "active ingredient/s" of their change mechanisms leading to greater fidelity in both the implementation of their plans and their approaches to data collection.

The MARAT program—options for introducing ToC

Seven participant schools in and around the London area participated in MARAT in the 2017/2018 school year. These consisted of two mainstream elementary schools, one secondary mainstream school, two elementary special schools, and two "all-through" special schools (one for ages 3–16 and one for ages 4–19).

The program involved schools engaging with a literature review and research methods in the particular focus area of autism literature via a series of workshops, facilitated by a research team from the university including researchers with specific expertise in autism. The literature review was tailored by the university team and was designed to summarize the evidence on a particular area of interest to the schools in terms of potential interventions and approaches for autism education. This focus was agreed by all the participating schools in advance of the program starting and in this iteration the focus was on

developing positive relationships for children with autism in elementary school education.

Two staff from each school—one a school leader and one a practitioner working at the "chalk-face" participated in the program and jointly attended the workshops, so that there was collaboration between the schools involved. In these workshops, schools developed an action plan based on an impact template, using themes, ideas or strategies arising from a series of literature engagement exercises.

We should be clear that in this iteration of MARAT, there was no formal introduction by the project team to the concept of Theory of Change or specific use of it as a model in the program. What we do here is to explore how such a ToC model could be introduced and why this might have been and potentially could be beneficial.

The action plan focused on drawing on the literature review to identify potential strategies to be piloted with particular children or classes that the school participants were currently thinking about in their day-to-day work. We see this as the initial "formation stage" for the emergence of embryonic theory(ies) of change as part of the program. Subsequently, schools worked with a facilitator on initiating a small-scale action research project in school, focused on the use of strategies identified from the literature review. School activities in relation to this were designed to be specific, actionable, and usually quite small-scale measurable interventions intended to achieve the desired outcome. We propose that these school actions could be re-framed as the logic models which describe the practical implementation model designed to action the outcome described by the emerging theory of change.

Seven case studies of the experiences of the school were written up for the project report for this iteration of MARAT. A research assistant undertook interviews with the participants about their experience of the program and what impact they felt it had had on bringing about change both in terms of their focus children and classes, and more widely across the school. The case studies were compiled primarily from these interviews as well as the school's final presentation which reported on the outcomes of their action research project. Each case study articulated a "driver" for innovation and identified an element from the literature which inspired schools. For example, one of the elementary mainstream schools which sought to improve focus pupils' access to imaginative play were inspired by Rubin's (2012) chapter on play in autistic children. The participants from the school, based on their reading of this, commented that "*social interaction is the bedrock for all humans and they* (pupils with autism) *will not develop unless they see others as interacting. I do not think we have looked at it in that way before*." This led to a refined focus on observation of children at play, staff collaboration and reflection on potential ways of offering additional support plus increased engagement with, and listening to, families. The result was, in the perception of the participants, the development of a more reflective culture in relation to working with autistic children in the school. No data was recorded, however, on changes to children's play.

This case study provides an illustration of why a more explicitly argued theory of change might be useful. The school was inspired by a particular piece of research, but their subsequent activities were not specifically guided by it. The (tacit unstated) theory of change in fact could be said to be closer to something like this: "Higher expectation of pupils' engagement in play, coupled with increased staff collaboration and focus, revitalizes elements of good practice such as structured observation of pupils and family engagement."

In the first element of our proposed revised model (see Figure 1), the ToC needs to explicitly link to the research with which the school had engaged.

As noted, in this case, the lack of a specific articulation of a theory of change, based on their engagement with the literature, meant that the link between theory and intervention was weak. Thus, the absence of an evidence base led to a lack of clarity on the type of short-term outcome being sought. As well, no child related data was shared, perhaps suggesting lack of clarity over what could, or should, be measured. This is not to suggest that the program had no positive impact on the school; the question rather is whether an explicitly articulated theory of change underpinned by context-specific logic models could have offered enhanced clarity on theoretical models, leading to increased rigor in school-based practice. We should of course note here that this is not in any way to be construed as a criticism of the school, but rather to identify the potential space for the addition of ToC to the program design.

We will now look in more detail at the experiences of one of the schools, named here School 1. School 1 is a special school which takes children with a range of needs including autistic children and children with physical disabilities. It has around 180 students with 12 students per class.

The focus for School 1 in MARAT was on unstructured times in school, like break times, which were becoming an issue for students and for staff who were having to manage issues that spilled back into the classroom after break times. The school had noticed that autistic students in particular were falling out with each other, not understanding the rules of games and not engaging in games "appropriately," leading to conflict, emotional dysregulation and frustration.

Case study-school 1

School 1's engagement did not focus directly on the literature in the review with provided by the MARAT team. The staff from this school were engaged in studying on a master's program and through this were interested in research by Calder et al. (2013) which suggested that there was little evidence that teaching social interaction skills directly to students with autism would be effective in this instance. They also looked at Hochhauser and Engel-Yeger's (2010) study which seemed to indicate that autistic children may need time to do things on their own, at least initially, rather than being pressured into group activities. Based on this, their action research project, in part, looked at separating students (or giving them more space/opportunity to be separate) during break times. It should be noted that although these studies were not in the review, they are broadly in a cognate area to the focus of the literature review, and it may well be that engaging with that review stimulated their interest in looking at this further research. In addition, it should be noted that the teaching of social skills for autistic children was not considered to be an isolated activity in School 1; it was embedded within a child-centered educational context, with weight given to both child voice and an enabling environment as part of day-to-day school provision.

Their research question was: *Will teaching positive interaction strategy improve social communications in breaktimes?* They worked collaboratively with other teachers in the school, the school sports coach and a school speech and language therapist. After a period of

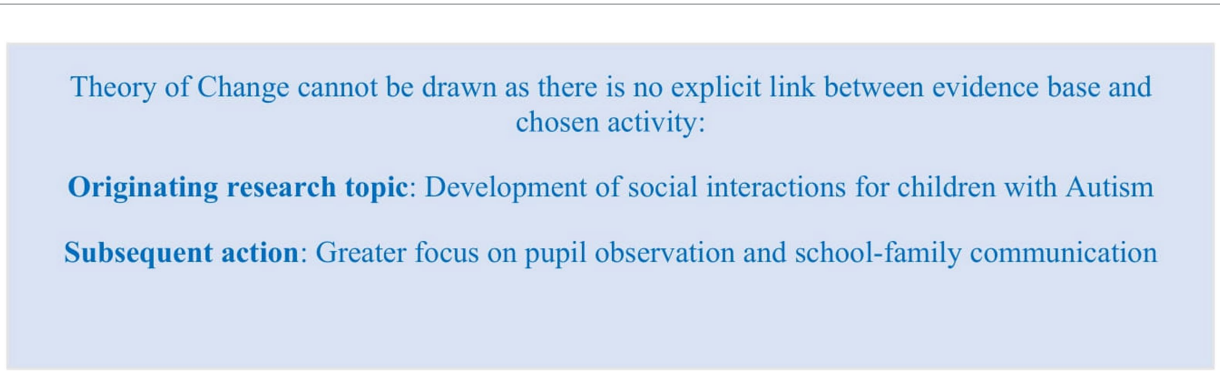

FIGURE 1
The ToC gap.

observations, they implemented a multi-faceted approach to helping autistic pupils to identify and manage emotions during periods of conflict. This involved two members of staff independently observing three focus children during unstructured times as well as using a questionnaire with these students focusing on their behavior and activity at breaktimes. Their teacher also developed a tracking sheet where the focus students could track how "good" their breaktime was and who they had been playing with, which was triangulated with observations of break time by teaching assistants. The team then took the most common behaviors, such as not taking turns playing cards and recorded what they had seen. Staff used these recordings to create role playing scenes which were then shown to the students who were asked what they thought about the behaviors they observed. Children identified that they "lost their temper" and could not "remember what to do to behave sensibly." In order to better understand what it felt like to lose their temper, the staff developed a further intervention which they called the "Gingerbread men" activity-where students were asked to write on a cut out figure what it felt like to win or lose. They found that some colored in the hands or heads red because losing made them want to hit things. Or they said that they felt like crying but could not cry. The focus was very much around confusion and the class teacher perceived this to be a direct result of the lack of clear guidelines at breaktime as opposed to their classroom experience. For example, they got cross when they did not understand the rules. So, in turn, staff talked about what they could do in this type of scenario. They also started to put in place some scripts for what to do in games (phrases like "can I join in," "what game are you playing," "can you tell me the rules") and encouraged them to play with different children.

In interviews, the project participants (i.e., the school staff) noted that.

"*after watching staff re-enact behaviours it broke down barriers. It had an element of humour in it, it took the anxiety out of it and engaged them…We found that talking with the focus students they were confused about the rules of games, they could not understand why the rules might change and that they should be the same for everyone.*"

The project participants reported that staff asserted that they "are starting to see a more positive return to class." The tracking system, included as part of the presentation by the project participants in the final workshop, showed that two of the three pupils felt more positive (although the teacher noted that one of the students may have been responding in the way they think the teacher would like them to).

Adding in a ToC model for school 1

In considering how a ToC model could have been added into this case, we theorized that a simple Theory of Change with underpinning logic models for this project might be as presented in Figure 2.

The logic models consist of the "Input" or "Activity" linked to the "Short Term Outcome." These represent strands of intentional activities undertaken by schools which combine to enable the school's overarching theory of change. For example, the input of "children reviewing videos" underpins the short-term outcome "recognition of behaviors…enables more appropriate responses" which underpin the ToC "Clear language support for children with Autism during play will reduce frustration and emotional dysregulation." This model illustrates the conceptualizations underpinning the initiation of a small-scale action research project in school, focused on the use of strategies identified from a literature review. The logic models describe the practical implementation designed to action the outcome described by the emerging theory of change, proving a clear and articulated link between theory and intervention.

Once the model has been established, more detailed decisions can be made, such as which material and human resources need to be deployed to achieve the desired activities (inputs). For example, "children reviewing videos" requires appropriate levels of permission; available equipment; people to operate equipment; time and space to review recording and appropriate opportunity to discuss footage and use it to deepen understanding of social skill development and enhancement of peer relationship.

Once this has been established, greater consideration can be given to the way in which the activity might be utilized to support the intended short-term outputs. For example: which types of footage are most beneficial for discussion? Are there any ethical issues or unintended outcomes? Have staff identified ways in which discussion of footage might extend situational understanding, enhance empathy or provide additional options for response? This may pave the way to challenge assumptions, such as the motivation of autistic students or the skill level of staff.

Finally, these discussions lend themselves to a much more focused approach to school data collection. School data collection is dogged by variability of quality (Godfrey, 2017; Tancred et al., 2018) and this approach enables consideration of monitoring the *extent* to which the planned activity was carried out and the *fidelity* by which it was undertaken. Then, the clarity as to outcome potentially enables data

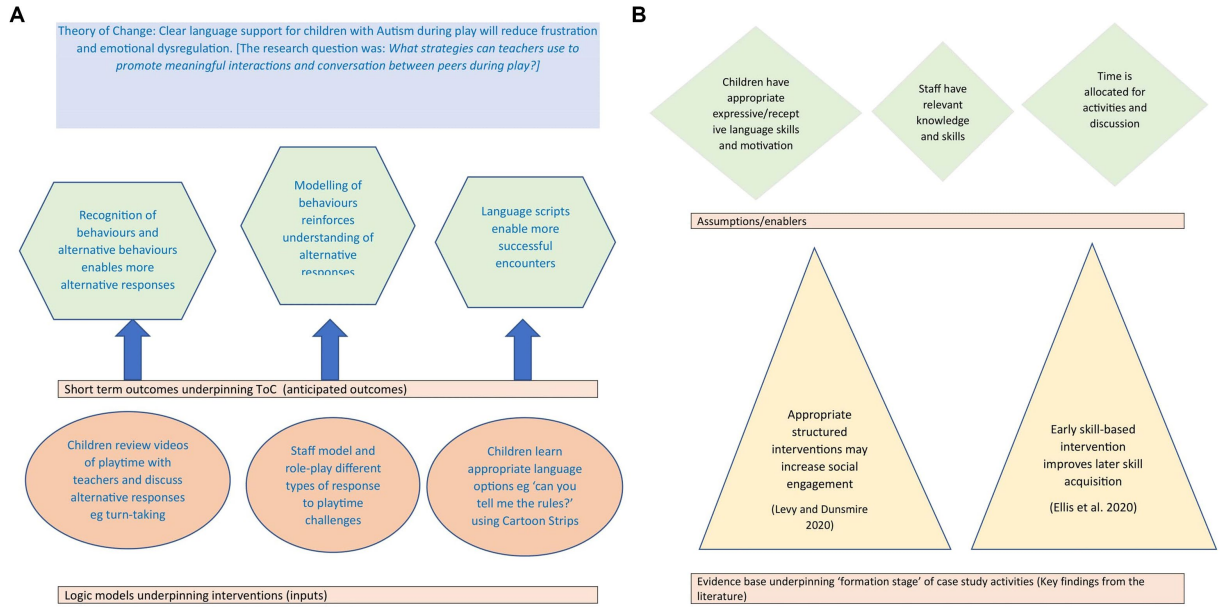

FIGURE 2
Theorized model of ToC.

collection on outcome to be better conceptualized. For example, in this case, the school might collect data on changes to empathy; changes to response to situations similar to those explored in the footage or changes to language used to explore certain scenarios. Broader data on changes to pupil relationships might also be collected.

How then might such an explicit theory of change model have made a difference to the project? We propose several possibilities for this. Firstly, it may make the link between the actual actions in the school and the research engaged with more explicit for the school as a whole and for individual teachers, helping them to further reflect on that research, their assessment of its weight and how they feel it relates to their local context. Secondly, it creates a concrete representation of the operational working theory that the school and the actors within it adopt—it brings into sharper focus the process of analytical generalizability as an outcome from the process of engagement with the research, and the program. This could mean that in terms of rolling out changes across the school more widely, or to other schools in the local area, that there is an explicit model of the assumptions and processes involved in the change in the local context, which could lead to a more successful implementation of such change. This "more successful implementation" might include greater fidelity to the intentions of the intervention, better collegiality through shared language and shared vision and possible more rigorous data collection due to greater clarity of objectives and purpose. We recognize that, of course, in a sense, this is only a "thought experiment," but nevertheless hope that it illustrates at least the potential for ToC models in this space.

Conclusion

Our review of the literature shows that models for the roll out of evidence-based (or evidence-informed) practices in autism education, including implementation science models, lack a focus on local adaptation. We also identify the role of research informed schools programs in helping such local adaptation in relation to a wide range of research evidence. Then, we argue, using a "thought experiment approach," that the work of schools on implementing interventions using research informed schools programs could be further developed by the inclusion of ToC models. We also note that the adoption of such models would concomitantly allow schools to further theorize how they see such interventions or evidence informed practices being used in the local context—thus increasing the "analytical generalizability" of their local case studies exploring the implementation of interventions or practices.

By a simple articulation of a Theory of Change model or models, underpinned by a clear identification of inputs and anticipated outcomes, it is easier to position the work of schools within a theoretical framework and understand the actions being undertaken. This also enables greater clarity in respect of decisions around desirable data collection. In Yin's terms, adopting ToCs in a research informed schools program could lead to increased validity and allow schools to present, in a more robust manner, both to internal and external audiences, more carefully curated local data about the impact of interventions. As well, the adoption of such ToC models may have the additional effect, particularly via enhanced transparency, of ensuring greater fidelity to program design during ongoing program implementation.

Over time, a Theory of Change structure utilized by schools in case study reporting may facilitate grouping and archiving of school reflective practice cases. This may also facilitate the building of a database of expected outcomes across similar logic models, against which schools may compare their own progress.

A further logical step could also be to include such programs, bolstered by ToC models, into the wider ecosystem of the rollout of interventions for autism education using IS models.

Further research on the use of ToC models in research informed school programs, such as MARAT, in practice, would of course be needed to further explore and validate the arguments made in this paper. We argue that there may be a potential paradigm shift created by schools' articulating a Theory of Change model, with a number of possible benefits. In addition to deepening the understanding of the link between the evidence base and activities within school, there is the possibility that shared language of intent, outcome, theory and logic model may be supportive in sustaining a culture of ongoing reflective practice both within and between schools.

Data availability statement

The datasets presented in this article are not readily available because we do not have permission to share the data from the study further. Requests to access the datasets should be directed to j.mintz@ucl.ac.uk.

Ethics statement

The studies involving human participants were reviewed and approved by the UCL Institute of Education Research Ethics Committee. The participants provided their written informed consent to participate in this study.

Author contributions

JM led on the development of the MARAT model. AR led on its implementation as described in this manuscript. AR and JM contributed equally to the conceptual and theoretical development and writing of the manuscript. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

Aarons, G. A., Hurlburt, M., and Horwitz, S. M. (2011). Advancing a conceptual model of evidence-based practice implementation in public service sectors. *Adm. Policy Ment. Health Ment. Health Serv. Res.* 38, 4–23. doi: 10.1007/s10488-010-0327-7

Biesta, G. (2007). Why "what works" won't work: evidence-based practice and the democratic deficit in educational research. *Educ. Theory* 57, 1–22. doi: 10.1111/j.1741-5446.2006.00241.x

Breuer, E., De Silva, M., and Lund, C. (2018). Theory of change for complex mental health interventions: 10 lessons from the programme for improving mental healthcare. *Glob. Ment. Health* 5:e24. doi: 10.1017/gmh.2018.13

Brown, C. (2015). *Leading the use of research evidence in schools*. London: IOE Press.

Brown, C. (2017). Research learning communities: how the RLC approach enables teachers to use research to improve their practice and the benefits for students that occur as a result. *Res. All* 1, 387–405. doi: 10.18546/RFA.01.2.14

Calder, L., Hill, V., and Pellicano, E. (2013). 'Sometimes I want to play by myself': understanding what friendship means to children with autism in mainstream primary schools. *Autism* 17, 296–316. doi: 10.1177/1362361312467866

Chen, H. T. (2016). Interfacing theories of program with theories of evaluation for advancing evaluation practice: reductionism, systems thinking, and pragmatic synthesis. *Eval. Prog. Plann.* 59, 109–118. doi: 10.1016/j.evalprogplan.2016.05.012

Cochran-Smith, M., and Lytle, S. L. (1999). The teacher research movement: a decade later. *Educ. Res.* 28, 15–25. doi: 10.3102/0013189X028007015

Cooper, A., Klinger, D. A., and McAdie, P. (2017). What do teachers need? An exploration of evidence-informed practice for classroom assessment in Ontario. *Educ. Res.* 59, 190–208. doi: 10.1080/00131881.2017.1310392

Davis, R., Campbell, R., Hildon, Z., Hobbs, L., and Michie, S. (2015). Theories of behaviour and behaviour change across the social and behavioural sciences: a scoping review. *Health Psychol. Rev.* 9, 323–344. doi: 10.1080/17437199.2014.941722

Dixon, M., Brookes, J., and Siddle, J. (2020). "Hearts and minds: the research schools network: from evidence to engagement" in *Getting evidence into education*, S. Gorard (London: Routledge), 53–68.

Eccles, M. P., and Mittman, B. S. (2006). Welcome to implementation science. *Implement. Sci.* 1:1. doi: 10.1186/1748-5908-1-1

Gage, N. (1989). The paradigm wars and their aftermath a "historical" sketch of research on teaching since 1989. *Educ. Res.* 18, 4–10. doi: 10.3102/0013189X018007004

Ghate, D. (2018). Developing theories of change for social programmes: co-producing evidence-supported quality improvement. *Palgrave Commun.* 4, 1–13. doi: 10.1057/s41599-018-0139-z

Godfrey, D. (2017). What is the proposed role of research evidence in England's 'self-improving' school system? *Oxf. Rev. Educ.* 43, 433–446. doi: 10.1080/03054985.2017.1329718

Heckman, J. J. (2005). The scientific model of causality. *Sociol. Methodol.* 35, 1–97. doi: 10.1111/j.0081-1750.2006.00164.x

Hochhauser, M., and Engel-Yeger, B. (2010). Sensory processing abilities and their relation to participation in leisure activities among children with high-functioning autism spectrum disorder (HFASD). *Res. Autism Spectr. Disord.* 4, 746–754. doi: 10.1016/j.rasd.2010.01.015

Jacobs, J. (1961). *The death and life of great American cities*. New York, NY: Random House.

Jocson, K. M., and Martínez, I. D. (2020). Extending learning opportunities: youth research in CTE and the limits of a theory of change. *Equity Excell. Educ.* 53, 165–176. doi: 10.1080/10665684.2020.1763552

Johnson, R. B., Onwuegbuzie, A. J., and Turner, L. A. (2007). Toward a definition of mixed methods research. *J. Mixed Methods Res.* 1, 112–133. doi: 10.1177/1558689806298224

Jones, B., Nagraj, S., and English, M. (2022). Using theory of change in child health service interventions: a scoping review protocol. *Wellcome Open Res.* 7:30. doi: 10.12688/wellcomeopenres.17553.1

Kainz, K., and Metz, A. (2019). Causal thinking for embedded, integrated implementation research. *Evid. Policy* 15, 125–141. doi: 10.1332/174426416X14779418584665

Kellogg Foundation (2004). *Using logic models to bring together planning, evaluation, and action: Logic model development guide*. Battle Creek, MI: Kellogg Foundation Available at: https://wkkf.issuelab.org/resource/logic-model-development-guide.html (Accessed June 30, 2022).

Meyers, D. C., Durlak, J. A., and Wandersman, A. (2012). The quality implementation framework: a synthesis of critical steps in the implementation process. *Am. J. Community Psychol.* 50, 462–480. doi: 10.1007/s10464-012-9522-x

Mintz, J. (2022). The role of universities and knowledge in teacher education for inclusion. *Int. J. Incl. Educ.*, 1–11. doi: 10.1080/13603116.2022.2081877

Mintz, J., Branch, C., March, C., and Lerman, S. (2012). Key factors mediating the use of a mobile technology tool designed to develop social and life skills in children with autistic spectrum disorders. *Comput. Educ.* 58, 53–62. doi: 10.1016/j.compedu.2011.07.013

Mintz, J., Seleznyov, S., Peacey, N., Brown, C., and White, S. (2021). Evidence informed practice for autism, special educational needs and disability in schools: expanding the scope of the research learning community model of professional development. *Support Learn.* 36, 159–182. doi: 10.1111/1467-9604.12349

Moore, G. F., Audrey, S., Barker, M., Bond, L., Bonell, C., Hardeman, W., et al. (2015). Process evaluation of complex interventions: Medical Research Council guidance. *Br. Med. J.* 350:h1258. doi: 10.1136/bmj.h1258

Moroney, D. A. (2020). From model to reality: the role of implementation readiness. *J. Youth Dev.* 15, 162–170. doi: 10.5195/jyd.2020.1057

NCEE (n.d.). *What works clearinghouse*. Available at: https://ies.ed.gov/ncee/wwc/ (Accessed June 30, 2022).

NCVO (n.d.). *How to build a theory of change—NCVO Knowhow*. Available at: https://knowhow.ncvo.org.uk/how-to/how-to-build-a-theory-of-change (Accessed June 30, 2022).

Nelson, J., and Campbell, C. (2017). Evidence-informed practice in education: meanings and applications. *Educ. Res.* 59, 127–135. doi: 10.1080/00131881.2017.1314115

NIRN (n.d.). *National implementation science network: active implementation framework: stages of implementation, lesson 7*. Chapel Hill, NC: Frank Porter Graham Child Development Institute, University of North Carolina Available at: https://implementation.fpg.unc.edu/modules-and-lessons (Accessed June 30, 2022).

Odom, S. L., Cox, A. W., and Brock, M. E.National Professional Development Center on ASD (2013). Implementation science, professional development, and autism spectrum disorders. *Except. Child.* 79, 233–251. doi: 10.1177/001440291307900208l

Odom, S. L., Duda, M. A., Kucharczyk, S., Cox, A. W., and Stabel, A. (2014). Applying an implementation science framework for adoption of a comprehensive program for high school students with autism spectrum disorder. *Remedial Spec. Educ.* 35, 123–132. doi: 10.1177/0741932513519826

Odom, S. L., Hall, L. J., and Suhrheinrich, J. (2020). Implementation science, behavior analysis, and supporting evidence-based practices for individuals with autism. *Eur. J. Behav. Anal.* 21, 55–73. doi: 10.1080/15021149.2019.1641952

Odom, S. L., Hanson, M., Lieber, J., Diamond, K., Palmer, S., Butera, G., et al. (2012). "Prevention, early childhood intervention, and implementation science" in *Handbook of youth prevention science,* eds. B. Doll, W. Pfohl, J. Yoon (New York: Routledge), 413–432.

Office of Elementary and Secondary Education (2020). *Evidence-based practices community of practice resources*. Available at: https://oese.ed.gov/resources/oese-technical-assistance-centers/state-support-network/resources/evidence-based-practices-community-practice-resources/ (Accessed June 30, 2022).

PCAR (2018). *Theory of change and logic models. Pennsylvania coalition against rape* Available at: https://pcar.org/resource/theory-change-and-logic-models (Accessed May 30, 2022).

Pollard, A., Black-Hawkins, K., Cliff-Hodges, G., Dudley, P., and James, M. (2014). *Reflective teaching in schools: evidence-informed professional practice*, London: Bloomsbury Publishing.

Rubin, L. C. (2012). "Playing on the autism spectrum" in *Play-based interventions for children and adolescents with autism spectrum disorders*, eds. L. Gallo-Lopez and L. C. Rubin (New York: Routledge), 47–64.

Sanetti, L., Kratochwii, T., Collier-Meek, M., and Long, A. (2014). *PRIME (planning realistic implementation and maintenance by educators)*. Storrs, CT: University of Connecticut Available at: https://implementationscience.uconn.edu/wp-content/uploads/sites/1115/2014/12/PRIME_guide1.pdf (Accessed June 30, 2022).

Schierhout, G., Hains, J., Si, D., Kennedy, C., Cox, R., Kwedza, R., et al. (2013). Evaluating the effectiveness of a multifaceted, multilevel continuous quality improvement program in primary health care: developing a realist theory of change. *Implement. Sci.* 8, 1–15. doi: 10.1186/1748-5908-8-119

Slavin, R. E. (2020). How evidence-based reform will transform research and practice in education. *Educ. Psychol.* 55, 21–31. doi: 10.1080/00461520.2019.1611432

Smolkowski, K., Crawford, L., Seeley, J. R., and Rochelle, J. (2019). Introduction to implementation science for research on learning disabilities. *Learn. Disabil. Q.* 42, 192–203. doi: 10.1177/0731948719851512

Stenhouse, L. (1981). What counts as research? *Br. J. Educ. Stud.* 29, 103–114. doi: 10.1080/00071005.1981.9973589

Stoll, L., and Louis, K. S. (2007). *Professional learning communities*, London: McGraw-Hill Education.

Størksen, I., Ertesvåg, S. K., and Rege, M. (2021). Implementing implementation science in a randomized controlled trial in Norwegian early childhood education and care. *Int. J. Educ. Res.* 108:101782. doi: 10.1016/j.ijer.2021.101782

Sweileh, W. M., Al-Jabi, S. W., Sawalha, A. F., and Zyoud, S. H. (2016). Bibliometric profile of the global scientific research on autism spectrum disorders. *Springerplus* 5, 1–12. doi: 10.1186/s40064-016-3165-6

Tancred, T., Paparini, S., Melendez-Torres, G. J., Thomas, J., Fletcher, A., Campbell, R., et al. (2018). A systematic review and synthesis of theories of change of school-based interventions integrating health and academic education as a novel means of preventing violence and substance use among students. *Syst. Rev.* 7:190. doi: 10.1186/s13643-018-0862-y

Teachout, E., Rowe, L. A., Pachon, H., Tsang, B. L., Yeung, L. F., Rosenthal, J., et al. (2021). Systematic process framework for conducting implementation science research in food fortification programs. *Glob. Health Sci. Pract.* 9, 412–421. doi: 10.9745/GHSP-D-20-00707

Thomas, G. (2021). Experiment's persistent failure in education inquiry, and why it keeps failing. *Br. Educ. Res. J.* 47, 501–519. doi: 10.1002/berj.3660

Thompson, A. M., Stinson, A. E., Sinclair, J., Stormont, M., Prewitt, S., and Hammons, J. (2020). Changes in disruptive behavior mediated by social competency: testing the STARS theory of change in a randomized sample of elementary students. *J. Soc. Soc. Work Res.* 11, 591–614. doi: 10.1086/712494

Wijekumar, K. K., Meyer, B. J., and Lei, P. (2013). High-fidelity implementation of web-based intelligent tutoring system improves fourth and fifth graders content area reading comprehension. *Comput. Educ.* 68, 366–379. doi: 10.1016/j.compedu.2013.05.021

Yin, R. K. (2003). Designing case studies. *Qual. Res. Methods* 5, 359–386.

Zahedi, S., Bryant, C. L., Iyer, A., and Jaffer, R. (2021). Professional learning communities at a primary and secondary school network in India. *Asia Pac. Educ. Rev.* 22, 291–303. doi: 10.1007/s12564-020-09665-7

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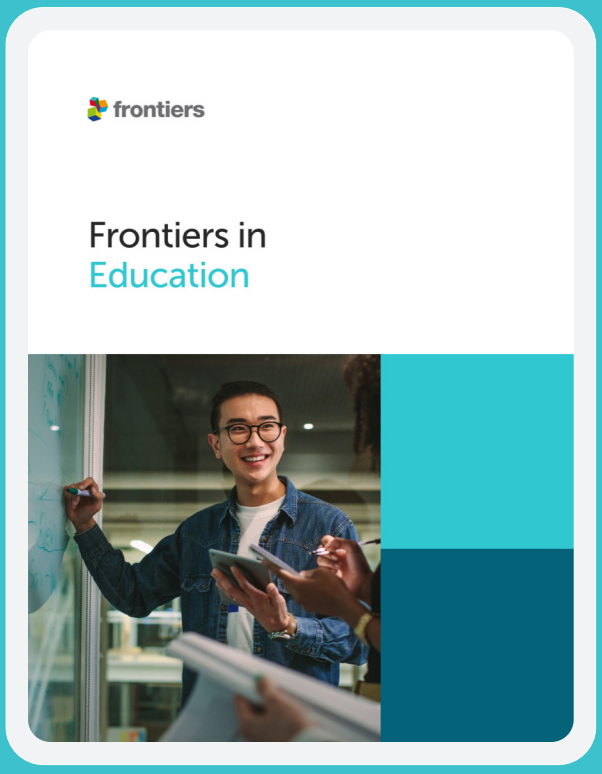

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