Review

Assessment as a matter of inclusion: A meta-ethnographic review of the assessment experiences of students with disabilities in higher education

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A B S T R A C T

Assessment plays a crucial role in student learning in higher education. Until rather recently, the role of assessment in relation to inclusion has been unexplored. In this study, we conduct a research synthesis of 42 studies published between 2010 and 2022, including 868 student participants, to map the assessment experiences of students with disabilities in higher education. Specifically, we conduct a meta-ethnographic review to synthesise qualitative studies and capture the participants' lived experiences of assessment. Our analysis considers how these experiences reflect both inclusion and exclusion. We theorise these elusive terms through the ideas of access and participation. Most of the studies considered the students' imminent physical, perceptual and social access to assessment, such as in the cases of inaccessible examination halls or digital assessment systems. A smaller subset of the studies considered inclusion/exclusion as a matter of students' social participation as fully accepted members of academia. In these studies, assessment was described as providing the students with opportunities to belong to academia, whereas experiences of exclusion portrayed assessment as a mechanism for social segregation and discrimination. Overall, our review shows that assessment is a primary barrier to the inclusion of students with disabilities in higher education. We propose that the predominant discourse of inclusion in assessment needs to widen from considering immediate access to assessment into considering how assessment regulates the full participation of diverse students in higher education. We discuss the implications of inaccessible assessment for all students and suggest that, ultimately, both access and participation are matters of student identity. Our review has important practical implications for the design of inclusive assessment in the current higher education contexts in which student cohorts are becoming increasingly diverse.

1. Introduction

Higher education (HE) has changed as a societal institution. What used to be an essentially elitist institution has now opened its doors to historically excluded students, including students with disabilities (Tight, 2019). The move towards massification has brought HE closer to the ideal of inclusive education for all (Moriña, 2017). Yet, simply providing access to HE is not sufficient to promote

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inclusion: inclusive learning environments and support mechanisms are needed to promote the success of the diversity of students during their studies (Moriña & Biagiotti, 2022). The HE literature is indeed paying increasing attention to inclusive pedagogies (Nieminen & Pesonen, 2022). However, as Stentiford and Koutsouris (2021) noted, how 'inclusion' is understood in HE remains unclear. Approaches to inclusion in this field vary from market-driven 'quick fixes' to individual accommodations to inclusive design for all.

This paper focuses on the particular role of assessment in the questions of disability inclusion. Whereas earlier reviews have successfully synthesised research on disability inclusion with respect to inclusive teaching and learning practices (e.g., Cumming & Rose, 2022; Roberts, Park, Brown, & Cook, 2011; Stentiford & Koutsouris, 2021), as well as on the experiences of students with disabilities in HE in general (e.g., Hartrey, Denieffe, & Wells, 2017; Kimball, Wells, Ostiguy, Manly, & Lauterbach, 2016; Mutanga, 2017), *assessment* has thus far been largely neglected in this literature. The focus on assessment is warranted in contemporary HE which is often characterised by metrics and rankings (see Peseta, Barrie, & McLean, 2017). From the student's point of view, assessment is known to be perhaps the most influential factor in learning. This is exemplified by decades of research on how practices such as summative and formative assessment, self-assessment, peer assessment, portfolios, and so forth, could promote student learning in HE.

Despite the well-known importance of assessment on student learning, only rather recently has the mainstream literature on assessment started to consider the viewpoint of student diversity (see Ajjawi, Tai, Boud, & Jorre de St Jorre, 2023). This may stem from the idea of assessment being seen as an objective measurement process of students' skills and capabilities (Boud et al., 2018). However, in mass HE settings, it is essential to consider how assessment is connected to the processes of inclusion and belonging for historically underrepresented students (e.g., Nieminen, 2022a), particularly because assessment is known to be tightly associated with student well-being (e.g., Jones et al., 2021). In this study, we focus on students with disabilities as a crucially important example of marginalised students in HE. This is considered one of the largest equity groups in higher education and beyond (World Health Organisation (WHO), (2023)), and indeed, most HE institutions have institutionalised support mechanisms for students with disabilities in particular. Earlier studies have largely reported that students with disabilities have negative experiences of assessment (e.g., Hanafin, Shevlin, Kenny, & Neela, 2007; Ryan, 2007). The fact that students with disabilities systematically require assessment accommodations (e.g., extended time in examinations) in HE systems around the world implies that assessment is widely inaccessible and may thus provide barriers to students with disabilities to represent their actual skills in assessment. However, so far, research on assessment and student diversity has primarily focused on the matters of learning, leaving the crucial aspect of inclusion somewhat underdeveloped. We are aware of one earlier review that has focused on students with disabilities and assessment in HE (Tai, Ajjawi, & Umarova, 2021), yet this study only focused on positive examples of inclusive assessment design. How is assessment connected to the inclusion *and* exclusion of diverse students in HE?

This study answers this question by providing a comprehensive synthesis of how students with disabilities themselves have experienced assessment based on earlier research. This quest is important for two reasons. First, as HE widens access to many historically excluded and marginalised student populations, it is vital to understand the lived experiences these students have about teaching and learning in HE. This is also true for assessment: by hearing the voices of students with disabilities themselves, we may be better equipped to develop inclusive assessment practices. Second, by hearing these voices, it is possible to theorise further how assessment might be connected to the processes of inclusion and exclusion in HE (see Ajjawi et al., 2023; Nieminen, 2023). This way, we may better understand the ethics and equity in how assessment shapes the inclusion, belonging and identities of the increasingly diverse students in HE. To fulfil these goals, we conduct a metaethnographic review of qualitative studies on the assessment experiences of students with disabilities in HE. We focus on studies published after 2010 to shed light on contemporary HE settings with the specific features of massification and diversification (Tight, 2019). Ultimately, we propose that the predominant discourse of inclusion in assessment needs to widen to consider how assessment regulates the full participation of diverse students in HE.
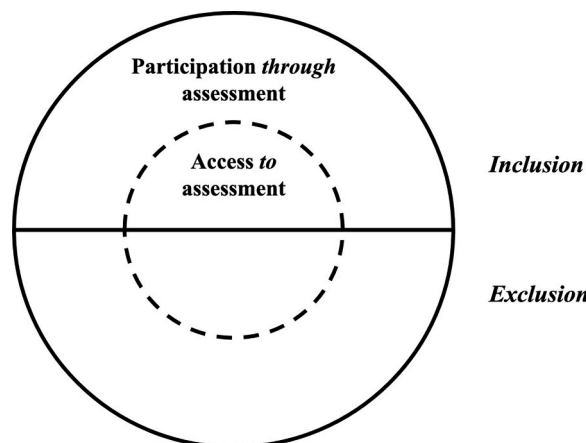

Fig. 1. Overview of our theoretical framework of assessment.

2. What does 'inclusion' mean in assessment?

'Inclusion' is an elusive term in HE settings since HE has not traditionally been considered as a site of societal inclusion (Moriña, 2020). What makes the term difficult is that it not only refers to educational practices but also to ethical and moral questions about why and how diversity should be nurtured, or repelled. As Stentiford and Koutsouris (2022) noted in their review, 'inclusive practices' are often promoted as meeting the needs of increasingly diverse student populations, yet the notion of inclusion suffers from 'tensions and fragmentation' (p. 14). Defining inclusion in assessment may be particularly problematic. As the main purpose of assessment is to sort and select, it by definition *excludes* certain students from certain spaces (Nieminen, 2022a).

We use Anette Bagger's (2022) framework for understanding inclusion in assessment. While Bagger wrote about school-level high-stakes testing, her work provides appropriate conceptual tools for our context, too. According to Bagger's framework, inclusion in assessment is a matter of *access* and *participation*. We supplement Bagger's theorisation with the theory of models of disability. How inclusion is understood in assessment is a matter of how disabilities are conceptualised (Gabel & Peters, 2004). First, one might follow a medical model of disability that frames disability as a personal, medical deficit that requires care and accommodation (Liasidou, 2014). Another way to conceptualise disabledness is the social model (Riddell & Weedon, 2006; Shakespeare, 2006). This model sheds light on how environments and conditions disable students, shifting the perspective from one of personal tragedy to the social, cultural and political contexts and characteristics of disability.

We provide an overview of our theoretical ideas in Fig. 1. The figure shows how the idea of participation includes accessibility; the boundary between is dashed as, in practice, these ideas cannot always be easily separated. The two spheres are separated by the ideas of inclusion/exclusion, denoting that both inclusion and exclusion can occur at the level of access and/or participation. We will explore these ideas fully in the next subsections.

2.1. Access to assessment

Inclusion is often provided by ensuring access *to* assessment for diverse student populations (Bagger, 2022). This view derives from the idea of 'positive discrimination', namely, that students could (and should) be categorised based on their characteristics and that some student subgroups deserve additional services in assessment situations. Such a view, by and large, follows a medical model of disability that understands inclusion with respect to providing individual accommodations for certain subgroups of students who can be classified as having disabilities. This is the global norm in higher education for promoting inclusive assessment (Johnstone, Geller, & Thurlow, 2022; Nieminen, 2022b). Assessment accommodations, such as extended time or personal space in examinations, are administered in most HE institutions around the world, as they are often mandated by legislation alongside disability adjustments in general (e.g., Järkestig Berggren, Rowan, Bergbäck, & Blomberg, 2016; Ketterlin-Geller & Johnstone, 2006). This means that students' individual characteristics are considered to ensure that all students are able to demonstrate their true skills in assessment. Access might take into account physical, perceptual and digital aspects of assessment (see, e.g., Ketterlin-Geller, 2008a, 2008b; Ketterlin-Geller, Jamgochian, Nelson-Walker, & Geller, 2012). Disabilities, mental health issues and illnesses are simultaneously understood as medicalised conditions. It is a global norm that higher education students require a diagnosis or a similar document to access disability services, assessment accommodations included. According to this view of inclusion, exclusion occurs if the access needs of students with disabilities are not met or if students with disabilities are completely excluded from an assessment situation (Schuelka, 2013). In such cases, the validity of assessment is compromised because the assessment results do not represent the true skill of the student (Russell & Kavanaugh, 2011).

Accommodations have long been at the core of disability inclusion and politics, and the need for them should not be denied. Our argument is that this approach is only one way of conceptualising inclusion in assessment. That said, earlier research has pinpointed fundamental issues with focusing too much on accommodations alone (see Johnstone et al., 2022). One problem with the accommodation model is that it leaves the initial design of assessment untouched. For example, an extended time in an examination may promote access for students with disabilities, but this practice does change the fundamentally inaccessible practice of the examination itself. As such, accommodations provide an 'afterthought' approach to inclusion; it locates the problem in the students who cannot fit the standards of inaccessible assessment, not in inaccessible assessment design (Nieminen, 2022b). Moreover, if the medical model is overemphasised, assessment accommodations might be portrayed as 'neutral' practices with no social consequences. As summarised by Cohen, Gregg, and Deng (2005), 'Accommodations, if appropriate for a student, should be viewed as simply the tools for accessing or demonstrating knowledge, *no different than reading glasses*' (p. 232; our emphasis). This idea has been shown to be false because, in reality, assessment accommodations are social practices that are often loaded with stigma, shame and embarrassment – unlike reading glasses (Nieminen, 2022b).

For these reasons, from this perspective, inclusion could also be promoted by designing assessment to be accessible *in the first place* and not as an afterthought (cf. accommodations). This idea follows the principles of Universal Design for Assessment (Johnstone et al., 2022; Ketterlin-Geller, 2008a, 2008b). According to this view, students' access needs could be determined before an assessment situation, and these needs could then be considered while designing assessment accessible. For example, if many students – both with and without disabilities – face barriers to representing their true skills because of a strict time limit in an assessment task, the time of this assignment could be extended for *all* students. While the focal point in Universal Design for Assessment focuses on accessible design rather than on accommodations, both approaches reach the same goal of making assessment more accessible for students with disabilities. Yet, it should be noted that in practice, Universal Design is much more rare in assessment (Tai et al., 2022). It is also more rarely mandated in HE legislation (Johnstone et al., 2022).

2.2. Participation through assessment

As prevalent as the idea of accessibility is in determining inclusivity in assessment, there are other viewpoints that drastically widen this approach. According to Bagger (2022), inclusive assessment is also a matter of *participation*. This approach does not only consider assessment as a matter of student characteristics or instructional design but situated assessment within a wider societal perspective. Historically, assessment has contributed to excluding students with disabilities from society by restricting their life opportunities (e.g., Hamre, Morin, & Ydesen, 2018; Schuelka, 2013). This view thus understands inclusion through a socio-political lens rather than as only a matter of assessment design. We define participation through assessment as students' inclusion as fully accepted members of academic communities (Konur, 2002; Madriaga, 2007; Moriña, 2017, 2017b; Ndlovu, 2019; Nieminen & Pesonen, 2022). The participation approach recognises and dismantles 'deeply entrenched and historical educational exclusion' (Stentiford & Koutsouris, 2022, p. 14), shifting the focus 'from a reductionist perspective to a systemic approach to alleviating the social and educational in-equalities that impact disabled students' lives and identities' (Liasidou, 2014, p. 131). The viewpoint of participation thus understands inclusion as a social, cultural and political process with fundamentally ethical aspects. This approach does not decline the approach of accessibility but builds on top of it and widens it (see Fig. 1). Access is, of course, required to participation (Bagger, 2022).

The participation approach acknowledges the role of assessment in both promoting and hindering the inclusion of students with disabilities (Bagger, 2022). This idea aligns with the social model of disability (Shakespeare, 2006). Whereas the medical model emphasises categorisations of students ('who is eligible for assessment accommodations'), the social model shifts the focus on the disabling conditions in assessment. Namely, it sheds light on how assessment *disables* students. From this perspective, inclusion is provided by designing out the barriers to students' full participation (see Graham, Tancredi, Willis, & McGraw, 2018). For example, it has been shown that in assessment, students with disabilities are shaped and shape themselves as 'the others' who cannot fit the idea of an 'ideal' or 'normal' student (Nieminen, 2022c, 2023). Fear of shame and stigma have been named as key reasons for students to refrain from using assessment accommodations, instead choosing not to disclose their (often visibly hidden) disabilities and thus underperforming when assessed (e.g., Grimes, Southgate, Scevak, & Buchanan, 2019; Kendall, 2016a,2016b; Moriña, 2022). Likewise, teachers and fellow students have reportedly wondered whether students with disabilities are *cheaters* as they receive easements for assessment (see Nieminen & Eaton, 2023). Assessment accommodations have been claimed to offer an unfair advantage and to threaten academic standards (Sharp & Earle, 2000; Vidal Rodeiro & Macinska, 2022, pp. 1–20). These kinds of portrayals limit the fundamental right of students with disabilities to be included in HE as its fully accepted members.

How could assessment, then, promote the full participation of students with disabilities? Assessment might promote students' full participation by preparing them for future roles as professionals. There is an emerging knowledge base on how student-centred assessment practices such as self- and peer-assessment, authentic assessment and portfolios could not only foster the learning of diverse students but also foster their sense of the self and professional identities (e.g., Tai et al., 2022). As such, ideas such as Universal Design for Assessment might promote not only access but participation as well (Johnstone et al., 2022). However, the role of assessment in promoting the full participation of students with disabilities has received little explicit attention. This is exactly why we decided to conduct this review.

3. Research objective

The objective of this review is to synthesise the findings of published studies that report on the assessment experience of students with disabilities in HE. To capture their full, lived experiences, we reviewed studies with qualitative methods. The outcome of our metaethnography consists of both a summary of the assessment experiences of students with disabilities in HE literature, as well as a theorisation of the role of assessment in the wider processes of inclusion and exclusion in HE. To capture the contemporary massified HE context, we reviewed studies published between 2010 and 2022. Our research questions were as follows.

- According to earlier qualitative studies, what kinds of experiences do students with disabilities have about assessment and assessment accommodations?
- How do these experiences reflect inclusion and exclusion, as understood through Bagger's (2022) model of access and participation?

4. Methods

4.1. Meta-ethnography

As the purpose of our study was to synthesise the in-depth lived experiences of students with disabilities, we conducted a meta-ethnographic review of qualitative research. Meta-ethnographies specialise in qualitative research synthesis (Noblit, 2019; Noblit & Hare, 1988). As noted by Timmerman and Mulvihill (2015), qualitative research may '[bring] to light the perspectives of persons whose voices have all-too-often been silenced' (p. 1621). Meta-ethnographies are suitable for review studies that synthesise earlier findings and develop new insights into existing theories (Maeda, Caskurlu, Kenney, Kozan, & Richardson, 2022). According to Noblit and Hare (1988), meta-ethnography typically has seven phases, which we introduced using the reporting guidelines of France et al. (2019): (1) getting started; (2) deciding what is relevant to the initial interest; (3) reading studies; (4) determining how studies are related; (5) translating the studies into one another; (6) synthesising translations; and (7) expressing the synthesis. We also followed Maeda et al.'s (2022) six recommendations for qualitative synthesis, outlined below.

4.2. Literature search

First, we outline our rationale for choosing meta-ethnography (cf. Maeda et al., 2022). We have formulated our research questions above; meta-ethnographies are particularly suitable for synthesising research participants' lived experiences. Meta-ethnography enables a reinterpretation of earlier findings in light of theories on access and participation (Bagger, 2022). As Maeda et al. (2022) noted, many other review traditions do not enable such theory-driven tools for analysis.

When determining relevance to our review, our starting point was that we anticipated that many studies would not focus specifically on assessment. Instead, they would examine the HE experiences of students with disabilities more generally and then discuss assessment as one factor amongst others. Many relevant studies might not explicitly use the term 'assessment' in the title or abstract. Therefore, we needed to create a search protocol that would capture all relevant studies while acknowledging that we would need an extensive full-text screening phase to identify assessment-specific experiences.

To find relevant sources, we started with the Scopus, Education Resources Information Center (ERIC) and Web of Science (WoS) databases. Following the recommendation of Maeda et al. (2022), we started sampling with a small number of databases to test data saturation and sufficiency. Saturation was reached with these databases, as we ended up with a sufficient amount of studies that enabled us to fully answer our research questions, which is why we ultimately did not conduct a supplementary search. Moreover, 42 studies is already a large number of studies for a rich metaethnographic synthesis (see Noblit, 2019). Following the recommendation of Maeda et al. we conducted the screening using Covidence, a web-based software for managing reviews. Table 1 summarises our search terms.

The search was conducted in June 2022 and limited to the 2010–2022 period in all databases. In Scopus, the search terms were sought from title, abstract and keywords. The results were restricted to journal articles published in the subject areas of psychology and social sciences, yielding 902 hits. In ERIC (accessed through the EBSCOhost research platform), the search was similar, but the assessment-related search terms were sought with the field code 'All Text', meaning that the retrieved studies could include the search terms in parts of the document beyond the title, keywords and abstract. This search resulted in 428 hits. Finally, in WoS, the search terms were sought in the 'Topic' field, which includes the title, abstract and keywords. The WoS index category was restricted to the Social Sciences Citation Index (SSCI), yielding 1242 hits. Our search process is depicted in Fig. 2.

Table 2 summarises our inclusion and exclusion criteria.

The titles and abstracts were screened against the inclusion and exclusion criteria by two authors. The first author screened all of the studies, and the second and third authors each screened 50% of them. The 'maybe' option in Covidence was selected if the abstract did not include the relevant information for the review. The conflict cases (n = 122) were checked and resolved by the first author.

The remaining 163 studies were subjected to a full-text review, which was conducted in a similar way to the screening phase: the first author reviewed all of the studies, and the second and third authors each reviewed 50% of them. To identify studies that included segments on the assessment experiences of students with disabilities, we categorised the 163 studies according to the centrality of assessment. A three-way categorisation was used: (1) no mention of assessment, (2) assessment played a peripheral role (e.g., one section of the study was devoted to assessment) and (3) assessment played a central role. Studies with no mention of assessment were excluded. We conducted a quality appraisal of the studies that fit the inclusion criteria (Maeda et al., 2022) by including all articles that presented a full methods section with descriptions of participant recruitment, participants, data collection instruments and data analysis. Forty-two studies were included in the final dataset, which was checked by all three authors using the Critical Appraisal Skills Programme, 2018.

4.3. Data extraction and synthesis

The third phase of meta-ethnography is reading the included studies. In practice, this phase blends together with the next phase, determining how studies are related. We started the analytical process by constructing an extraction table that included the relevant characteristics of the included studies and their contexts (France et al., 2019), as well as open-ended fields for determining students' access and participation in assessment (Table 3). The open-ended nature of the extraction table enabled us to refine our initial ideas about inclusion and exclusion, as well as access and participation, as the main concepts that would tie the studies together (Noblit, 2019). The extraction table was tested and revised by the research team through multiple research meetings. All three authors took part in extracting the data. The first author extracted data from 50% of the studies, and the second and third authors each extracted data from 25% of the studies. Any unclear cases were discussed and resolved in research meetings.

The fifth phase of meta-ethnography consists of translating the individual storylines of the studies into one another. It is 'the process of taking concepts from one study and recognising the same concepts in another study, though they may not be expressed using identical words' (Thomas & Harden, 2008, p. 5). We used Bagger's (2022) theorisation of access and participation and the processes of inclusion and exclusion to which they relate as the concepts through which we 'create[d] new interpretations from the synthesis' (Maeda et al., 2022, p. 4). We did not expect the original studies to use these specific terms or ideas. We started the process by focusing

Table 1
Search terms used for our review. The search terms in different columns of the table were connected by an AND operator.

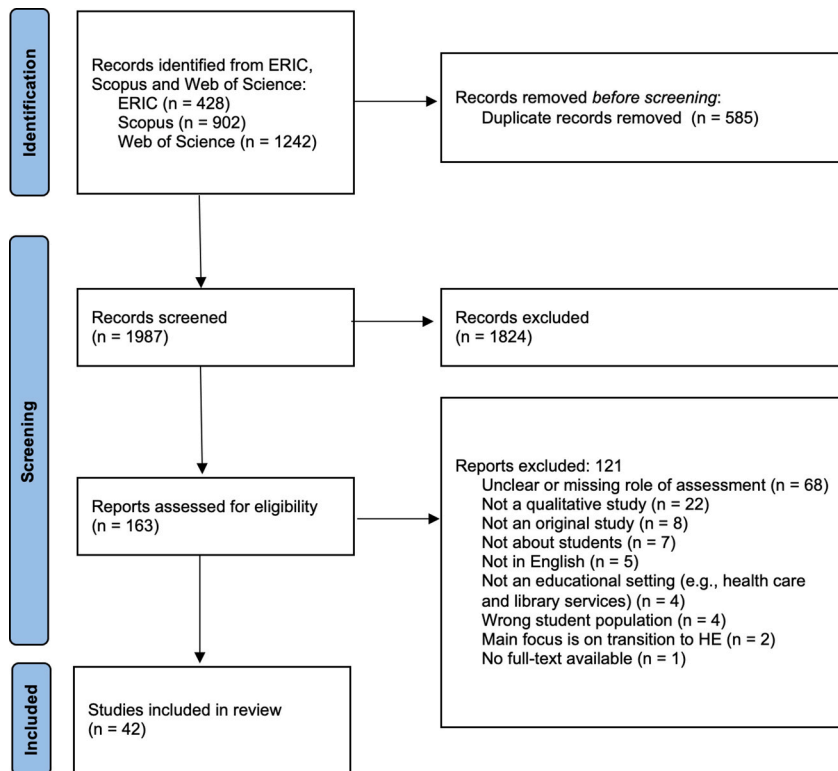| Participants	Focus of the study	Assessment	Context
disab*	qualitative OR interview OR perce* OR experience	assess* OR test* OR exam* OR 'assessment accommodation' OR 'assessment adjustment' OR 'extra time'	'higher education' OR university OR post-secondary OR college

Fig. 2. PRISMA diagram.

Table 2

Inclusion and exclusion criteria for abstract and title screening.

	Inclusion criteria	Exclusion criteria
Phenomenon	● Empirical qualitative studies. ● Studies concerning experiences of teaching and learning of students with disabilities.	● Other types of studies (e.g., quantitative and mixed methods studies). ● Studies concerning students' experiences of other aspects of HE (e.g., health care and library services, and experiences of physical accessibility if not related to teaching and learning). ● Studies concerning other factors beyond student experiences.
Role of assessment in the study	● Central. ● Peripheral.	● No mention.
Type of record	● Peer-reviewed studies. ● Empirical studies. ● Journal articles. ● Studies published between 2010 and 2022. ● Studies published in English. ● Full text available.	● Non-peer-reviewed studies. ● Book chapters, conference proceedings, reports, theses. ● Secondary studies (e.g., reviews and literature analyses). ● Studies published before 2010. ● Studies in languages other than English. ● No full text available.
Participants	● HE: under- and postgraduate students. ● Focus on the experiences of students with disabilities. ● Studies that focused only on students' experiences. ● Studies whose sample also included experiences of multiple stakeholders.	● Doctoral students and graduates. ● Students at lower levels of education. ● Studies with a main focus on transition phases before or after HE. ● Studies that did not include students' experiences (e.g., studies that focused only on teachers' experiences). ● Focus on other equity groups.

on *reciprocal translations* for 'studies in which the storylines are commensurate' (Noblit, 2019, p. 5), given that earlier research has mostly pointed out the difficulties and barriers that assessment evokes for students with disabilities (Nieminen, 2022c, 2023; Tai et al., 2022).

Phases six and seven of meta-ethnography involve the synthesis of the translations and expressing this synthesis in a meaningful way (Noblit & Hare, 1988). We used the two translations of *inclusion as access* and *inclusion as participation* to unravel the 'full set of translations' with 'potentially competing interpretations' (Noblit, 2019, p. 5). In doing so, we intended to reveal more than what the individual studies considered about the processes of inclusion and exclusion in assessment. Specifically, we conducted a refutational synthesis focusing on 'identifying, understanding and reconciling the contradictions, rather than developing concepts around the

Table 3
Data extraction table.

	Fields in the extraction table
Characteristics of the study	Open text fields: ● Year of publication ● Country in which the study was conducted ● Discipline (e.g., mathematics, education) ● Research question(s)/objective(s) ● Main theoretical framework/idea(s) ● Data collection method(s) ● Data analysis method(s)
Characteristics of the participants	Open text fields: ● Number of participants in the qualitative data ● Type(s) of disabilities
Key information about the context	Open text field
Student experiences of assessment	● Type(s) of assessment (e.g., tests, self-assessment) ● Type(s) of assessment accommodation(s) Open text fields: ● Access: experiences of inclusion ● Access: experiences of exclusion ● Participation: experiences of inclusion ● Participation: experiences of exclusion
Student experiences of assessment accommodations	Open text fields: ● Access: experiences of inclusion ● Access: experiences of exclusion ● Participation: experiences of inclusion ● Participation: experiences of exclusion
Any other notes?	Open text field

similarities' (Sattar, Lawton, Panagioti, & Johnson, 2021, p. 10). In this way, we intended to shed light on the various potentially contradictory ways in which assessment sets up enablers of and barriers to the inclusion of students with disabilities. These findings formed the second-order interpretations of our dataset, which we introduce fully in the Findings section. In the Discussion section, we introduce a third-order interpretation that places our refutational analysis in its socio-political context. As Urrieta and Noblin (2018) noted, meta-ethnography is most useful when it 'addresses the contexts and nature of educational knowledge' by bringing forth 'the history of ideas' (p. 45).

Finally, we provide a brief positionality statement, following previous recommendations (Maeda et al., 2022; Noblit, 2019). We work according to the paradigm of 'inclusive education for all', rather than the paradigm of 'special education'. This means that we are devoted to making HE more accessible for all students. However, as a collective, we have training in special education and its ideas of cognitive interventions and medicalised support.

5. Findings

5.1. Brief description of the dataset

In this section, we briefly describe our dataset (Appendix A). Most studies were conducted in Europe (17/42) and North America (13/42), with four studies conducted in Africa, four in Australia, three in Asia and one in the Middle East. Most studies did not take a disciplinary approach: 5/42 were conducted specifically in a STEM context, 2/42 in medical education and 2/42 in other specific disciplines. The number of participants ranged from one (Hsiao, Zeiser, Nuss, & Hatschek, 2018; Lewis & Lynn, 2018) to 139 (Nieminen, 2023), with the total number of participants in the studies being 868. The types of disabilities varied greatly from physical to cognitive and emotional disabilities, while also including conditions such as illnesses, phobias and mental health issues. The most recurrent disability type was cognitive (e.g., learning disabilities). Most of the studies used interviews (41/42), and some drew on observations (2/42) and qualitative surveys (1/42). Most datasets were analysed using an inductive, data-driven approach. Fourteen studies used a theoretical framework when analysing students' experiences (e.g., the sociomaterial theories of Tai et al., 2023 and situated learning of Ali, Kisielewska, Subhan, & Tredwin, 2020). Four studies drew on longitudinal datasets (Madriaga & Goodley, 2010; Hewett, Douglas, McLinden, & Keil, 2017; Hewett, Douglas, McLinden, & Keil, 2020; Hewett et al., 2023).

It must be emphasised that our dataset specifically concerned experiences of examinations. Most (39/42) of the studies focused extensively on students' experiences of examinations. Experiences of accommodations were also predominantly focused on exam-related adjustments (see Appendix A).

5.2. Access: experiences of inclusion (22/42 studies)

5.2.1. Assessment accommodations provide access to examinations (20/42)

In 20 studies, students reported that assessment accommodations had provided physical and/or perceptual access to examinations. These studies reported cases in which assessment accommodations enabled the students to demonstrate their true skills in assessment

(e.g., Majoko, 2018). The students truly appreciated this form of support. For example, Ali et al. (2020) reported that 'participants across the board appreciated the adjustments for students with LDs [Learning Disabilities]' (p. 159); Nieminen (2023) reported that almost all of the 139 participants mentioned that testing accommodations had been helpful; and Slaughter and colleagues (2020) noted that all of their 21 participants reported positive impacts of extended time accommodations during assessment. A participant in the study by Slaughter, Lindstrom, and Anderson (2022) summarised the influence of accommodations on the success of students with disabilities in examinations:

> Some students went as far as saying that extended time has made a profound difference in their academic career. (…) 'I think it's definitely one of the things in my college career that's helped me the most'. (p. 9)

Extended time accommodations, such as extended time in examinations and other course assignments, were reported to enable students' true skills to be demonstrated during assessment. For example, a student in the study by Hadjikakou, Polycarpou, and Hadjilia (2010) gave a positive account of receiving access to examinations through extra time accommodations:

> There was a case of a lecturer who gave me extra time … up to 3 hours, because the module was 'Designing Circuits', and the lines needed to be straight and the figures well-designed. He told me that he couldn't do otherwise, because he was aware that I knew the answers and I just needed more time. (p. 413)

Similarly, separate testing rooms were described as a positive means of support. In separate testing rooms, students can complete their examinations in a distraction-free environment. Kendall (2016a, 2016b) study provides a good example of this. Kendall challenged the claim by Liasidou (2014, p. 124) that separate testing rooms are a 'segregating and stigmatising form of provision' by reporting students' positive experiences. For example,

> I'm given a quiet room to do my exams in, obviously it is invigilated but sometimes, I am literally on my own, it's brilliant! (Sue in Kendall, 2016a, 2016b, p. 7, p. 7)

Proficient communication with staff members was described as crucial for successful accommodation processes. Many studies emphasised the importance of students' self-advocacy in communicating their needs to their universities. For example, in Pfeifer, Reiter, Hendrickson, and Stanton (2020), Opal described how she earned a higher grade on an exam due to extra time. Opal needed to defend herself: 'I took it [into my] own hands, because I was struggling. I went and [asked] for help and figured that out for myself, so what's your problem with it? If you want extra time, go get tested, and go figure it out for yourself' (p. 15).

5.2.2. Assessment accommodations provide socio-emotional access to examinations (8/42)

In many cases, accommodations were reported to reduce testing anxiety (e.g., Goegan et al., 2023) by allowing students to 'concentrate and feel less anxious when taking exams' (Stein, 2013, p. 151). Fullarton and Duquette (2016) report the case of Elizabeth, who had poor eye-hand coordination and processing problems, and who overcame her feelings of anxiety by using assessment accommodations. This story exemplifies how assessment accommodations do not only promote access on a cognitive but also on a socio-emotional level:

> During her first year, Elizabeth chose not to register with the special services department and without accommodations, her marks plummeted. She realized that she was overcome with anxiety and did not do well on her exams. In second year Elizabeth made the decision to register at the special services department and received the same exam accommodations as in high school. (…) She feels she has a deep understanding of how she learns and credits the availability of services and accommodations to her completion of two degrees. (Fullarton & Duquette, 2016, p. 61, p. 61)

In some cases, the mere knowledge of the existence of accommodations was described as reducing anxiety: 'It makes me feel better knowing that I have more time even though I'm probably not going to use it' (Slaughter et al., 2022, p. 8). In another study, Len stated:

> I didn't actually use the extra time, but it was a lot of comfort knowing it was there … 'cos I didn't have to rush at all. I finished within all the pre-set time zones. (Len in Madriaga & Goodley, 2010, p. 124, p. 124)

5.2.3. Inclusive assessment design (2/42)

In two studies, access was provided through an inclusive assessment design. Tai et al. (2022) discussed open-ended exam design from the viewpoint of accessibility. In their study, Siobhan described the open-book format of examinations: '[open-ended examinations] took away the mental stress that I've really felt in the past … of having to sit there and memorise things when I wasn't in the mental space' (p. 8). Nieminen and Pesonen (2019) proposed that to design the accessibility issues related to examinations, examinations might need to be eliminated altogether. They outlined an accessible self-assessment model that provided mathematics students with learning disabilities access to ongoing formative assessment. With examinations removed, the students described being able to focus their energy fully on learning.

5.3. Access: experiences of exclusion (40/42 studies)

5.3.1. Inaccessibility of examinations (32/42)

Closed-book examinations were identified as 'the most significant structural barrier' (Lewis & Lynn, 2018, p. 14) to inclusion in

many studies. The format of examinations was described as profoundly inaccessible due to the limitations of time, format and physical environment. In many studies, exam-driven assessment cultures were described as excluding students with disabilities: 'The lack of use of alternative forms of assessments in assignments and examinations impeded the participation of SWDs in learning' (Majoko, 2018, p. 7). Examinations were reported to produce many barriers, for example in cases of exam phobia (e.g., Brandt, 2011) and test anxiety (e. g., McManus, Dryer, & Henning, 2017). MacCullagh, Bosanquet, and Badcock (2017) discussed how participants with and without disabilities considered examinations to cause barriers to access:

> Almost all students, both dyslexic and non-dyslexic, indicated that they disliked high-stakes written examinations and felt that they were a poor method of assessing knowledge and skills. Many mentioned stress associated with written examinations, and some commented that this assessment method is rigid, artificial, stifles creativity and does not reflect real-life situations or abilities. (p. 14)

Inaccessibility of exam halls was raised as an issue in many studies. For example, exam halls might be completely inaccessible for students who use a wheelchair (e.g., Andoh et al., 2022). One of the most striking stories about their inaccessibility was reported by Braun and Naami (2021):

> One day I nearly lost my life on my way to write an exam. When I go to this split metal drain cover, the front tire of my wheelchair got stuck in there and I lost my balance and fell out of my wheelchair. (…) I hurt my arm, but I couldn't go back to the [residence] hall to rest because I had to go and write the two-and-a-half-hour exam. In fact, I wrote that exam with so much pain which lasted beyond the exam time period. (p. 108)

The students described how there was a general lack of reduced-distraction testing environments. The participants in MacCullagh et al. (2017) described the noise in written exam halls caused by 'shuffling papers, coughing, sneezing and outside construction noises' (p. 14). Some recent studies also noted the lack of COVID-19-safe exam halls (e.g., Gin, Guerrero, Brownell, & Cooper, 2021).

The written format of examinations was noted as a problem in many studies (e.g., Ali et al., 2020; Hewett et al., 2023nts with visual impairments and learning disabilities found this format inaccessible and hoped for more diverse formats of assessment. Tsvaro, a student with dyslexia, summed up the problem as follows:

> Assignments and examinations are presented in written form only. We are all boxed into writing. We are unique individuals. Oral presentations can be a panacea to my grammatical and spelling mistakes in my writing which are a result of dyslexia. (Tsvaro in Majoko, 2018, p. 8, p. 8)

The time limitation of examinations was also mentioned as a major barrier to access. Even when given extra time, the students did not always have enough time to complete their examinations (e.g., Erten, 2011; Hadjikakou, 2010; Kunnath & Mathew, 2019; Norris, 2019; Yusof, Chan, Hillaluddin, Ahmad Ramli, & Mat Saad, 2020). Often, the students wished for opportunities to have breaks during examinations. For example, in Kourea, Christodoulidou, and Fella (2021), Anna explained: 'I wish I could have more breaks during an exam and not have to sit still for 3 h in front of the computer … ' (p. 117). Some students noted that the overall scheduling of examinations was not accessible because 'examinations are all crammed into a few weeks and very little time is scheduled between them' (Moriña, Cortés, & Melero, 2014, p. 52). In Lewis and Lynn (2018), Dylan, a statistics student with dyscalculia, explained how time limitations provided an inauthentic barrier to access:

> It's really really unfortunate to me, I think that, in mathematics, it's not just that you understand the concept. It's not just that you can get a correct answer, you also have to do it in a certain amount of time, which inevitably is like this really bizarre artificial constraint. Especially now that I've worked in industry as a data analyst. And yes, I had time constraints, I had to get a report done in this amount of time or whatnot. It's nothing like sitting down for a test and you have 60 min to do this insane page of stuff and this huge mental dump, where these kinds of rewriting things would really become problematic, I would just flat out run out of time. (p. 14)

5.3.2. Problems accessing assessment adjustments (18/42)

The 'troublesome process' (Goegan et al., 2023, p. 5) of accessing assessment accommodation was described as long and arduous (e. g., Milic Babic & Dowling, 2015; Redpath et al., 2013). Because the students needed to prove their disabledness by acquiring a diagnosis, the process also required economic resources. In many studies, the students described how there was a limited amount of information available about assessment adjustments (e.g., Pfeifer, Reiter, Cordero, & Stanton, 2021). One participant expressed frustration about the inaccessible process of applying for accommodations:

> I had to wait for two months to make a provision of scribe services available in my role book. I made three trips to the main campus of the university to get this done. I was alone and there was no help. (Kunnath & Mathew, 2019, p. 180, p. 180)

Many students explained that it was not easy to contact their teachers and disability centres about their personal issues (e.g., Kourea et al., 2022). The attitudes of teachers also hindered students' access to adjustments:

> Sometimes when you ask for an extension, they are a bit begrudging and ask you, do you really need one? I wouldn't be asking if I didn't! It's so annoying. (Kendall, 2016a, 2016b, p. 7, p. 7)

Even when assessment accommodations were officially granted, they were not always implemented appropriately. In Hewett et al. (2023), 41% of the participants (13 students) reported that they had not received the adjustments they were supposed to receive (see

also Brandt, 2011; Majoko, 2018; Nnama-Okechukwu, Chukwuka, & Okoye, 2020). U8 shared their story:

> The department identified the accommodations I would need and informed my professors, but these were not accommodated. I did not receive any support from the department, meaning I did not get any further assistance. (U8 in Abed & Shackelford, 2020, p. 6, p. 6)

Sometimes the assessment accommodations themselves were inaccessible. Stein (2013) reported how one student received access to a separate testing room that was not free of distractions:

> Taking tests in a professor's office was also challenging, as the professors often made phone calls or had other students stopping by during office hours. (p. 151)

Gin et al. (2021) discussed the inaccessibility of online test proctoring technologies. The proctoring system might have marked the behaviour of students with disabilities as 'abnormal' (e.g., bathroom breaks, stimming). This technology made students uncomfortable and caused anxiety:

> I can say that the camera being on and recording me wasn't helping me because every time I looked back up at the screen to look for the next problem, all I saw was a picture of my own face being recorded. You know, almost all of my [previous] accommodations [during examinations] are specifically to alleviate my anxiety so that my disability doesn't overwhelm me. (Sal in Gin et al., 2021, p. 20.)

5.3.3. Inaccessibility of feedback (3/42)

In three studies, feedback was described as inaccessible. In Nieminen and Pesonen (2019), Tyrsky, a student with dyslexia, was unable to decipher the mathematical notations in an online feedback system. Olave-Encina (2022) reported how Tom, a student with visual impairments, was unable to access his feedback in an inaccessible digital system.

5.4. Participation: experiences of inclusion (5/42 studies)

5.4.1. Counter-spaces (3/42)

Three studies outlined counter-spaces that enabled students with disabilities to fully participate in otherwise exclusive assessment structures. Timmerman and Mulvihill (2015) noted that disabilities were well accepted in the context of special education studies: assessment accommodations were seen as normal practices. In Nieminen (2023), one participant described the assessment accommodation system as 'slow, inflexible, and dehumanizing' (p. 13), yet many students reported positive stories about individual teachers who demonstrated care and support within a system characterised by different values. As Nietos stated:

> It makes me feel grateful and even touched that this teacher seemed to sincerely care about my well-being. The teacher was ready to break the rules for me. That was the first time at university that I felt like the teacher really cared about their students. (Nietos in Nieminen, 2023, p. 14, p. 14)

Tai et al. (2022) discussed the counter-spaces of separate testing rooms, which may redefine ideals of normality. This was exemplified by Sofia:

> When I had to go to the physical place, I would see other people also getting extra time and stuff to go have breaks. It was really nice to feel normal, I guess, in that sense. I haven't really felt excluded. (p. 7)

5.4.2. Full participation through authentic assessment (2/42)

Authentic assessment – assessment that aligns with the practices and tools of students' future professions – was described as promoting the full participation of students with disabilities. Tai et al. (2022) noted that some students 'spoke positively of examination designs which they could relate to their future practice', relishing 'the opportunity to focus on and demonstrate capabilities and knowledge that they saw as important for professional or disciplinary practice, promoting possibilities for inclusion beyond the university' (p. 8).

Similar ideas were reported by Nieminen and Pesonen (2019) in the context of mathematics. Their study introduced an inclusive self-assessment model that replaced a traditional course exam with a formative assessment. This system was seen by Tyrsky as more meaningful for the learning of mathematics:

> Through self-assessment you become more aware of the training in mathematics, because just like in any sport, you constantly need to track your own performance. (p. 9)

5.4.3. Full participation through co-design of assessment accommodation (1/42)

Hsiao et al. (2018) introduced a 'collaborative decision-making process for developing effective academic accommodations' (p. 244) in music theory. Through a single case study, their study outlined how Nancy, a student with ADHD, was invited to collaboratively develop assessment accommodation practices. Together with faculty members, Nancy identified challenges in the current accommodation design, brainstormed better alternatives and evaluated the outcomes of the modification process. This co-design process not only led to a more effective assessment design but also to what the authors described as a transformation: 'The collaborative

process has transformed all team members, including Nancy, and ultimately precipitated a shift of attitude for the music theory faculty' (p. 252). In this process, Nancy became a fully accepted member of the faculty:

> *From fear of stigmatization to self-advocacy*. Looking back on the experience, Nancy reflected, 'I probably shouldn't be so afraid to speak up when I feel like I need assistance or if something is just not working'. (original emphasis; p. 252)

5.5. Participation: experiences of exclusion (24/42 studies)

5.5.1. Outright discrimination (12/42)

Outright discrimination is an obvious example of how students with disabilities are excluded from academic communities. Clear examples of discrimination come from students' stories about teachers' inappropriate actions in assessment situations. The students in Stamp, Banerjee, and Brown (2014) reported that some teachers 'adopted a judgmental tone, shamed/blamed them for issues related to ADHD' (p. 153), and said 'I don't believe in this whole ADHD nonsense' (p. 153). Nnama-Okechukwu et al. (2020) shared how partially sighted students in a Nigerian university often had to rely on volunteer student readers who read the examination papers out loud. However, it was not easy to find such volunteers: 'Sometimes we don't even have volunteer readers because the sighted students are not ready to be insulted by lecturers' (Udoka in Nnama-Okechukwu et al., 2020, p. 7).

In some studies, students reported that teachers described students with disabilities as malingering cheaters (e.g., Pfeifer et al., 2021). In Goegan et al. (2023), Cassidy needed to convince teachers that she was not a cheater:

> For Cassidy, a professor outright refused her request for accommodation despite her efforts to advocate: 'It was just in my Sociology class where I was really having to fight for it. Because all the profs are so worried about us cheating. (…) I didn't choose to have a reading disability right. So it made it a little bit harder'. (p. 6)

Not all teachers were willing to provide assessment accommodations, which hindered not only students' access to assessment but also their full participation (e.g., Brandt, 2011; Moriña et al., 2014). A student in Abed and Shackelford's (2020) study described this situation as 'humiliating' (p. 6). In many contexts, disability accommodations are mandated by law, and thus refusing to provide assessment accommodations is illegal. As Mullins and Preyde (2013) noted, teachers may show resistance towards providing accommodations because they believe that they provide students with disabilities with 'an unfair advantage' in assessment 'as opposed to levelling the educational field' (p. 154). In Stampoltzis, Tsitsou, Plesti, and Kalouri (2015), all 10 participants had experienced discrimination by their teachers:

> Most of the time you are afraid of speaking. They will think that you don't study, you don't care. So it's up to you to keep your fears or fight against them. Professors are busy here and they won't go into details. (…) This is injustice for those who have dyslexia. As a result, professors believe that students with dyslexia should compete under the same circumstances with their classmates. (I2 in Stampoltzis et al., 2015, p. 163, p. 163)

5.5.2. Stigmatising assessment accommodations (9/42)

Students described feelings of shame and embarrassment while using assessment accommodations (e.g., Stamp et al., 2014; Yusof et al., 2020). In these experiences, assessment accommodations stigmatised their users as potential cheaters, as exemplified by Erin in Timmerman and Mulvihill (2015). Erin described what other students thought about her taking a test in a separate room: ' … oh, she's leaving to take her test; she must be, you know, getting the answers or something' (p. 1618). A similar issue was raised by Ali et al. (2020): 'I'd say some students. I wouldn't say [they] are annoyed, but they say oh how come we don't get 25% extra time?' (p. 158).

Nieminen (2023) discussed how assessment accommodations stigmatised their users: 'There's a fear of stigma around assessment accommodations' (Kide in Nieminen, 2023, p. 15). In the same study, Savu described the stigma of assessment-specific accommodations:

> It feels like being labeled as 'invalid' and 'disabled' when you apply for help. Now that I've ended up studying at university, I feel that I just have to survive. I won't be getting any support in future working life either. (Savu, a student with dyslexia and mental health issues in Nieminen, 2023, p. 15).

In many studies, the fear of stigma was mentioned as a reason for non-disclosure. In Mullins and Preyde (2013), the participants indicated that 'they wanted to be above the need for accommodations' (p. 155). This was exemplified by P3: '[…] I just want to be normal and by not getting the accommodations I thought that perhaps that might make me a bit more normal' (p. 154). Similarly, Pfeifer et al. (2021) reported that many students opted out of extended-time accommodations 'to ensure their peers do not notice their absence from the classroom on exam day' (p. 20). For example, Opal's friend had stated to a group of classmates: 'Oh, she gets extra time. No wonder she got a better grade than everyone' (p. 20). In Slaughter et al. (2022), one student reported that assessment accommodations are 'a form of cheating or academic dishonesty' (p. 10). Some students felt that the stigma was too high a price to pay, leading them to opt-out from using assessment accommodations:

> I'd like to be able to ask for help and not be made to feel that I'm using my disability as a crutch. I'd like to be able to believe that I can achieve on my own credit without being stigmatised as having some kind of weakness or incapability. (P12 in McManus et al., 2017, p. 345, p. 345)

In Majoko (2018), Zuza referred to disability as a 'bad omen' that needs to be hidden in assessment:

I cannot keep on disclosing my residual sight to lecturers lest I can be stigmatized. Disability is an indicator of [a] bad omen. So I do not remind lecturers to write assignments and examinations in large font size. I have to adjust my visual acuity to the small font size. (Zuze in Majoko, 2018, p. 8, p. 8)

5.5.3. Assessment segregates and marginalises students (8/42)

Assessment accommodations were portrayed to construct segregated places: 'The constitution of the learner in the segregated setting of the special exam room reconfirms disabled people as ostracised from mainstream society and threatens to configure their subjectivities, yet again, as impaired' (Madriaga & Goodley, 2010, p. 125). This segregation was exemplified by Ertem's (2011) study, in which Terry shared their story about 'a feeling of social exclusion from their classmates' (p. 108) and separation from the student community:

It does cause physical separation in that respect. You don't get to do things the way everyone else does. Writing them with extra time and not writing them with class. You can't fix that but it's always a little frustrating because you don't want to be 'abnormal,' you want to be 'normal.' You want to fit with the rest of the class. (Terry in Ertem, 2011, p. 108)

In many studies, assessment was explicitly described by the students as disabling them by causing further barriers to learning. Madriaga and Goodley (2010) reported how examinations caused one student to have epileptic fits:

He indicated that he had several epileptic fits while preparing for five different unseen examinations. He attributed his fits to stress over the exams. Although he received entitlements to separate exam accommodations and extra time as a disabled student, he did not experience any relief from his epileptic fits. (pp. 124–125)

In such situations, assessment created spaces of normalcy and of *ab*normalcy (see Nieminen, 2023; Norris et al., 2019). As noted by Redpath et al. (2013), students with disabilities face barriers 'in an environment that was designed for non-disabled people' (p. 1336). The narrow-minded idea of normalcy was exemplified by students in Mullins and Preyde (2013):

Additionally, many participants reported that they perceived their education to be 'one-dimensional' (P6). The students reported that they believed that university is set up for one type of learner, from which they felt systematically oppressed: 'Schooling's very one dimensional. It's very – you know, testing is all the same, how they test knowledge, how they, how they structure the classrooms. Like it's for every, […] every situation is usually the same. So it's not like they branch out and try and figure out how best people learn. So you know, a person with an [invisible disability] has to fit in that, in that environment (P6)'. (Mullins & Preyde, 2013, p. 156, p. 156)

5.5.4. Inauthentic assessment hinders full participation (5/42)

Five studies addressed how inauthentic assessment might cause barriers to students' full participation in higher education. Notably, in Tai et al. (2023), some students criticised examinations for their inauthentic nature that hindered students from growing as future professionals. Rebecca, a law student, said: 'With the exams I don't think I'll ever be in practice, and be told like, "You must write this memorandum of advice in 2 h and you only have one book to do it, go"' (p. 8). Similarly, Norris and colleagues (2019) discussed the inauthentic barriers that examinations create for students with disabilities due to their limitations of time and format. These limitations were 'not perceived in clinical practice leading the participants to conclude that the assessment process placed a *false glare* on their abilities' (p. 5; emphasis added). In Madriaga and Goodley (2010), Alan summarised how the inauthentic nature of examinations might cause barriers for *all* students:

Do you think it is actually a good thing sticking someone in an exam room for 3 hours anyway whether they are disabled or not? C'mon. Think about it! (p. 124)

From this viewpoint, inauthentic assessment produced barriers for HE to fulfil its purpose of equipping diverse students with the skills of lifelong learning. For example, in Erten (2011), Victoria pondered whether the exam-oriented assessment culture is enough to ensure the purpose of HE. According to Victoria, 'if the purpose of a higher education institution is to make sure that students successfully obtain their degrees, the assessment methods should be changed' (p. 109):

We shouldn't have to be asked to memorize. Especially students with disabilities can't deal with that, you just can't. You need the concepts to understand. […] I think it's difficult to transform the way the curriculum has been set up. This has been like this for years. That would definitely be a hard angle to take. (Victoria in Erten, 2011, p. 109, p. 109)

6. Discussion

This meta-ethnographic review has synthesised 42 studies concerning the assessment experiences of students with disabilities in HE. In this final section, we provide a synthesis of the findings and provide guidelines for future research and practice. Next, we provide a critical interpretation of our findings by discussing what our analysis reveals about the assessment of *all* students.

6.1. Synthesis of our findings: changing the discourse of inclusion in assessment

Our study has provided an overview of the assessment experiences of students with disabilities, at least when it comes to published scholarly work. Using Bagger's (2022) framework, we revealed that 40/42 studies reported experiences of exclusion. This is a worrying ratio that signals that assessment is commonly identified as a barrier for the learning and inclusion of diverse students. However, 22/42 studies reported that assessment had promoted students' inclusion by giving them access to assessment, and 5/42 studies reported that assessment had fostered students' social inclusion as fully accepted members of academia and wider society. Our review is the first to comprehensively synthesise the assessment experiences of students with disabilities in HE, supplementing a recent review of students' experiences of inclusive assessment design (Tai et al., 2021).

Yet, our main contribution reaches beyond a synthesis of earlier empirical evidence – as important as that is. Our main contribution derives from a *changed discourse* for discussing assessment in HE settings. First, our findings emphasise assessment as an important technology for regulating the inclusion of students with disabilities in HE. This idea clashes with the widespread conceptualisation of assessment as an objective, 'neutral' process of measuring cognitive learning outcomes (Boud et al., 2018). Our findings emphasise the thoroughly social nature of assessment. The student experiences included in our analysis highlight that assessment plays a key role in the processes of inclusion and exclusion in HE. Our findings reveal how assessment largely *excludes* students with disabilities in HE. Even though the aim of meta-ethnographies is not to generalise findings, we show that this issue is somewhat global and systemic: similar findings have been identified from studies of HE systems around the world. This is concerning, as many forms of exclusion in our dataset are not only morally troubling but, in many contexts, illegal. For example, in countries where assessment accommodations are mandated by legislation, it is illegal for faculty members not to provide these accommodations if they are officially granted by the disability service office. Even then, such cases were reported in our dataset (e.g., Abed & Shackelford, 2020; Brandt, 2011; Moriña et al., 2014).

Second, our study contributes to earlier research on assessment and student diversity by providing a new discourse to discuss 'inclusion' in the context of HE. 'Inclusion' in assessment is commonly understood as a matter of accessibility, yet our review also emphasises the importance of paying attention to the processes of full participation (following Bagger, 2022). The discourse of access/participation particularly widens the prevalent way of discussing inclusive assessment as a matter of accommodations and Universal Design for Assessment (see Johnstone et al., 2022; Nieminen, 2022a, b; Tai et al., 2021). Our analysis has shown that both the accommodation model and the approach of Universal Design may contribute to providing access *to* assessment; and at the same time, both approaches may contribute to promoting students' full participation *through* assessment. As such, the discourse of access/participation focuses on the goal of inclusive assessment rather than the practical means. While access to assessment has been the main focus of research on assessment of students with disabilities in HE (see Nieminen, 2022c), our findings indicate that assessment regulates students' full participation in HE, and consequently their future participation in society as professionals. While we only identified a handful of studies delving into how promoting such participation could explicitly be designed in assessment, this sets an important line for future research.

We note the two intertwined yet partly separate missions of *preventing exclusion* and *promoting inclusion* in assessment (following Nieminen & Pesonen, 2022). Some of our findings regarding exclusion are alarming. For example, 12 of the 42 studies reported outright experiences of discrimination. The first step towards more inclusive assessment is to prevent such exclusionary assessment situations from happening. In the era of massification, HE institutions must implement assessment policies and practices that openly challenge discrimination against diverse students. Otherwise, assessment hinders the power of HE to fulfil its role as a promoter of societal inclusion. Specifically, our review sheds light on the role of examinations and examination-specific accommodations as a major barrier to inclusion (cf. Hanafin et al., 2007; Ryan, 2007). If HE institutions aim to equip diverse learners with skills to operate in contemporary knowledge societies, such 'traditional' assessment practices may need to be critically examined and reformed from the viewpoint of inclusioon. Overemphasis on the accommodation model may further contribute to societal stigma of disability and diversity as something that needs to be hidden, accommodated and normalised (see Dolmage, 2017; Nieminen & Eaton, 2023). While it is crucial to provide adequate accommodations for students who need them, this medicalised view does not fully capture the deeper nuances of inclusion. An overemphasis on the medicalised approach may promote a false sense of inclusion without taking the further step to adapt the inaccessible assessment system as a whole (see Ajjawi et al., 2023; Nieminen, 2022b; Tai et al., 2021).

There is a growing body of evidence on what works, why and for whom in inclusive assessment design (Ajjawi et al., 2023). For example, programme-level interventions (e.g., Tai et al., 2022), faculty training (e.g., Moriña & Biagiotti, 2022), assessment choice (e. g., Morris, Milton, & Goldstone, 2019) and assessment co-design together with students (e.g., Dollinger et al., 2022) provide intriguing opportunities for future practice. As our findings indicate, authentic assessment in particular might promote the wider societal participation of students with disabilities by equipping them with skills they will need in their future professions. Similarly, inclusive assessment approaches that promote social relationships and interdependence (e.g., peer assessment; see Merry & Orsmond, 2020) may promote the inclusion of students with disabilities as full members of academic communities.

Our study has various implications for future research. Overall, the experiences of the students included in our review are a reminder that assessment in HE was not initially designed for the purpose of 'inclusion', but for the purpose of credentialing, categorising, dividing and comparing students in the historically exclusive context of academia. This ultimate purpose of assessment foregrounds any inclusive assessment initiatives and needs to be taken into account. Research initiatives that seek to align with the social model may wish to explore how assessment *disables* students. Such research would develop our understanding of assessment as a social and cultural practice that has consequences for students' inclusion and well-being. Overall, our recommendation for future research is to identify pockets of good practice in inclusive assessment and explore it in depth: what works, why, for whom and under what circumstances? Importantly, as our study has only focused on disabilities, future studies could take a more comprehensive

approach to inclusion by incorporating intersectional approaches.

Almost all of the studies in our dataset drew on interviews and surveys. To capture the full, lived experiences of students, we call for more diverse methods in this research area. More in-depth qualitative methods, such as ethnography and observation methodologies, were absent from our dataset. Participatory methods that see students as co-researchers provide a particularly intriguing starting point for future research. We note the potential of design-based research and participatory action research for promoting inclusive assessment design. This would allow students with disabilities to have their say about which research initiatives are meaningful for promoting their inclusion (Dollinger et al., 2022). Moreover, longitudinal approaches are needed to determine whether and how students' experiences of inclusion/exclusion in assessment carry over to their later studies, or even to their transition to working life.

6.2. Implications for all students: assessment as a matter of professional identity formation

Finally, we pushed ourselves to think further: what could these student experiences teach us about assessment in HE more generally? The viewpoint of students with disabilities, which is often portrayed as something 'special' and 'diverse' – as if their voices would not represent student cohorts overall – may reveal a great deal about the assessment of *all* students.

Based on our metaethnography, we suggest that assessment provides students with an opportunity to *know themselves* through assessment experiences (see Reay & Wiliam, 1999). HE has traditionally been introduced as a transformative institution in which students do not only learn but *become someone new*. The idea of shaping students as responsible future citizens is widely present in HE policies, practices and philosophies around the world (see Yang, 2022). Our review emphasises the role of assessment in forming students, and diverse students in particular, by shaping their professional identities (Barrow, 2006; Tomlinson & Jackson, 2021). Professional identities are always built in relation to something, or someone; as students study in HE, they shape their professional identities in relation to, for example, other students and the material they learn. Yet, it is assessment that provides students with knowledge that is particularly powerful in shaping their professional identities (see Nieminen & Yang, 2023). Through the seemingly objective and often numerical information it provides, assessment may send strong signals about what kinds of subjects students are. While assessment has always been a powerful determinator of student identities (e.g., Reay & Wiliam, 1999), this effect may be stronger in contemporary HE, in which students' futures are increasingly shaped through numerical data, metrics, rankings and grades (Lynch & Hennessy, 2017).

This has particular implications for diverse students. Barrow (2006) argued that assessment provides the means for students to understand themselves in relation to *abilities* (see also Nieminen & Yang, 2023). We supplement this view by noting that assessment also provides knowledge about *dis*abilities. While all students develop their identities through assessment, these processes may be more sensitive for students who have historically been marginalised in HE settings. Through assessment, some students may develop 'othered' and indeed *dis*abled identities (Allan, 2010). The processes of inclusion and exclusion are thus not something that happen to students with disabilities only, but to all students. While most students may not feel excluded in terms of *access* (although mental health issues, stress and anxiety affect a high number of students; Jones et al., 2021), it may be that the barriers to full *participation* are similar for many student populations. Fig. 3 represents a conceptual framework for how students' professional identities are formed through the experiences of inclusion and exclusion that assessment provides. Each assessment encounter codes knowledge about inclusion and exclusion. In other words, through each assessment situation, students come to understand themselves as being included or excluded.
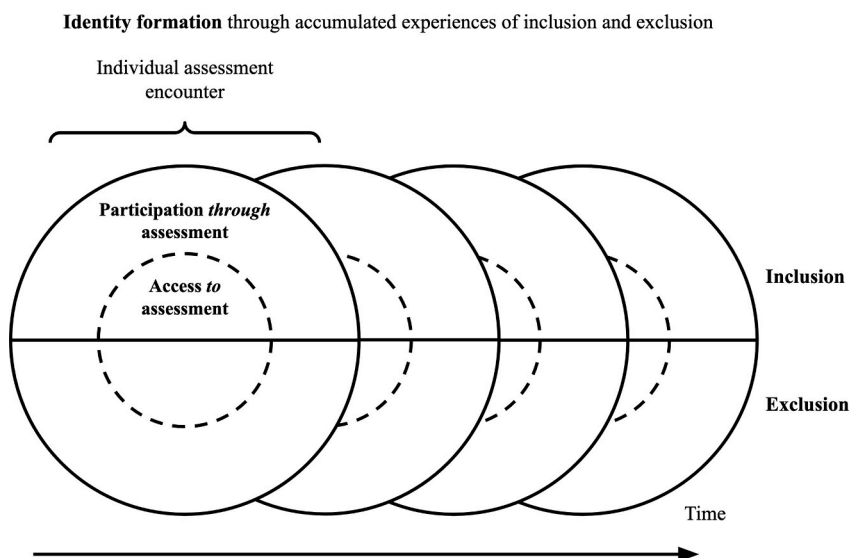

Fig. 3. A conceptual framework for understanding the professional identity development of diverse students in HE as they take part in assessment.

This may occur at the level of access and/or participation.

The experiences of inclusion and exclusion are thus not fleeting but they may have long-lasting effects on diverse students. Rather, they provide a powerful social structure through which students build their professional identities. However, these experiences may repeat over time and accumulate, which we have depicted in Fig. 3. Through accumulated experiences of exclusion, students with disabilities may learn to understand themselves as the 'others'. In other words, assessment may marginalise students with disabilities as individuals who are potentially cheating, wasting limited resources and dangerous for the meritocratic assessment systems of HE (Nieminen, 2022c; Nieminen & Eaton, 2023).

It must be noted that the primary purpose of assessment in HE is to measure, rank and sort students (Boud et al., 2018). As Riddell and Weedon (2006) noted, assessment is needed to uphold the meritocratic values in academia: academia needs assessment to enable the ranking and comparison of top students and institutions. From the viewpoint of professional identity development, there will always be a paradox between assessment given that 'assessment instruments are essentially designed to make constructions in the shape of hierarchies and categorisations in education', whereas 'inclusive education thrives on deconstructing constructions and moving beyond such hierarchies and categorisations' (Ydesen, Milner, Aderet-German, Gomez Caride, & Ruan, 2023, p. 4). Through these categories and hierarchies, assessment creates identity categories based on *dis*abilities and values them accordingly. The knowledge produced through assessment (such as numerical or letter grades) is often powerful in denoting which students are seen as 'failing', which ones as 'special', and which ones as 'normal' (see Nieminen & Yang, 2023). The massification of HE can be seen as a disruption of the status quo of HE, as it provides students with disabilities with an increased access to HE and to the future prospects it provides. Yet, in order for HE to truly promote the participation of students with disabilities and other marginalised students, we must better understand how assessment shapes their professional identities.

We call for future research and practice that focuses on examining how assessment shapes student identities, and how it may create 'othered' student identities. Such insights would supplement the earlier approaches to 'inclusive assessment design' that have mostly focused on promoting *learning* for all. A few intriguing opportunities arise when assessment is seen as a matter of identity formation. First, understanding these processes necessarily requires longitudinal approaches. Second, the research focus needs to shift to assessment that celebrates diverse identities rather than tries to mitigate and normalise them. Jorre de St Jorre, Boud, and Johnson (2021) discussed assessment that enables students to represent their abilities in diverse ways, arguing that such forms of assessment are needed in HE that educates future professionals. Indeed, the experiences of exclusion in our dataset seem to derive not only from a narrow set of assessment practices but also from a narrow understanding of what it means to *be and become a university student*. Third, one possibility arises from 'students as partners' initiatives that give students with disabilities a voice in the matters of assessment and accommodation design (see Dollinger et al., 2022). In this way, students with disabilities may be provided agency over their own identity formation, providing them a way to take more control over this process (Nieminen & Yang, 2023).

6.3. Limitations

Various limitations of our review should be noted. First, as we focused on student voices by reviewing qualitative research, we excluded other sources of evidence. Second, our search protocol might not have identified all available evidence on inclusive assessment design. This might skew our findings, which were focused on examinations. Third, we used the search term 'interview' knowing that this method is prevalent in HE literature, but using other search terms (e.g., 'observation' or 'ethnography') might have enabled us to identify additional sources. Fourth, our focus on contemporary research enabled us to examine the history of ideas in more recent studies, as proposed by Urrieta and Noblin (2018), which means we excluded many earlier contributions to the literature (e.g., Hanafin et al., 2007). Fifth, we only used 'disab*' as a search term, meaning that our dataset only included students with disabilities (and those with conditions described as such). We did not use a specific definition of 'disability'. Future studies should recognise student diversity as a whole, perhaps drawing on intersectional approaches.

6.4. Final words

Our review synthesises the assessment experiences of students with disabilities and in doing so reveals how assessment contributes to the inclusion and exclusion of students with disabilities in HE. We propose that the predominant discourse of inclusion in assessment needs to widen to consider how assessment regulates the full participation of diverse students in HE. We outline a potential future trajectory for research aimed at understanding how assessment contributes to the identity formation of *all* students through the experiences of inclusion and exclusion it provides. Designing inclusive assessment for all is not only a matter of learning but a matter of student identities. We hope that our findings serve as a springboard for future research and practice to provide a more inclusive future for assessment.

Study	Country	Discipline	N	Types of disabilities[a]	Data collection methods	Data analysis methods	Theoretical framework used in analysis	Type of assessment	Type of assessment accommodations
Abed and Shackelford (2020)	Saudi Arabia	Multiple	22	Learning disabilities and comorbid ADHD (10 students)	Semi-structured interviews	Phenomenography (categorisation)	–	Examinations and assignments	Extended time for examinations and assignments, private rooms for testing
Ali et al. (2020)	UK	Medical education	15	Dyslexia	Semi-structured interviews	Inductive thematic analysis	Situated learning	Examinations	Extra time in examinations
Andoh et al., 2022	Ghana	Unclear	19	Physical disabilities	Semi-structured interviews	Thematic analysis	The ubuntu theory	Examinations and quizzes	–
Brandt, 2021	Norway	Multiple	19	Dyslexia, blind/partially sighted, deaf/hard of hearing, mobility impairments, exam phobia, temporary impairment	Single and focus group interviews	Thematic analysis	–	Examinations	Extra time in examinations, separate examination rooms
Braun and Naami (2021)	Ghana	Multiple	2	Mobility disabilities	Photovoice (photographs and group narrations)	Thematic analysis	–	Examinations	Room reserved for students with special needs
Erten (2011)	Canada	Multiple	7	Learning disabilities, mobility difficulties, chronic health issues	Focus group interviews	Interpretive data analysis	–	Examinations	Separate testing rooms
Fullarton and Duquette (2016)	Canada	Multiple	4	Learning disabilities	In-depth interviews	Cross-case analysis through coding and categorising	–	Examinations	Extra time in examinations, separate testing rooms
Gilson and Dymond (2012)	Hong Kong	Multiple	5	Blind, low vision, above-knee amputation, hearing loss	Observation, semi-structured interviews	Content analysis	–	Examinations	Examination accommodations
Gin et al. (2021)	USA	STEM	66	Chronic health conditions, hearing loss, learning disabilities, mental health/ psychological disabilities, physical disabilities, vision loss	Semi-structured interviews	Coding	–	Examinations	Extra time in examinations
Goegan et al., 2023	Canada	Multiple	6	Learning disabilities	Semi-structured interviews	Phenomenological analysis	–	Examinations	Extra time in examinations
Hadjikakou et al. (2010)	Cyprus	Multiple	10	Mobility disabilities	Semi-structured interviews	Coding	–	Examinations	Extra time in examinations
Hewett et al. (2017)	UK	Unclear	32	Visual impairment	Multiple longitudinal interviews, case studies with observation	Thematic analysis	International Classification of Functioning, Disability and Health (ICF), Bioecological Systems Theory of Human Development	Examinations	Extra time in examinations, separate testing rooms
Hewett et al. (2020)	UK	Unclear	32	Visual impairment	Multiple longitudinal interviews	Thematic analysis	Bioecological Systems Theory of Human Development	Examinations	Extra time in examinations, digital assessment
Hewett et al., 2023	UK	Unclear	40	Visual impairment	Multiple longitudinal interviews	Thematic analysis	Access, participation and progression in higher education	Examinations	Examination accommodations

(*continued*)

Study	Country	Discipline	N	Types of disabilities[a]	Data collection methods	Data analysis methods	Theoretical framework used in analysis	Type of assessment	Type of assessment accommodations
Hsiao et al. (2018)	USA	Music	1	ADHD	Single case study: multiple sources of data (e.g., psychological tests, academic assignments, interviews)	Qualitative analysis, following the case study methodology	–	Examinations	Extra time in examinations, separate testing rooms
Kendall (2016a, 2016b)	UK	Multiple	13	Learning disabilities, chronic pain, mental health problems, arthritis, sclerosis	Interviews	Thematic analysis	–	Examinations, alternative assessment	Alternative assessment formats, extra time, scribing, access to a reader and/or computer
Knott and Taylor (2014)	UK	Unclear	4	Asperger syndrome	Focus group interviews	Thematic analysis	–	Examinations and assignments	Extra time in examinations, alternative assessment formats (e.g., oral presentations)
Kourea, Christodoulidou, & Fella, 2022	Cyprius	Multiple	62	Cognitive and emotional difficulties (e.g., learning disabilities, anxiety disorder)	Survey (N = 62), of which some participated in interviews (N = 9)	Thematic analysis	–	Examinations and assignments	Extra time in examinations, access to a reader
Kunnath and Mathew (2019)	India	Multiple	42	Celebral palsy, deaf, hard of hearing	Focus group interviews	Grounded Theory and content analysis	–	Examinations	Examination accommodations, scribing
Lewis and Lynn (2018)	USA	Statistics	1	Dyscalculia	Video recordings of two interviews	Coding	Emancipatory approach to analysis to 'push back oppressive structures' (p. 2)	Examinations	Extra time in examinations
MacCullagh et al. (2017)	Australia	Multiple (social sciences)	13	Dyslexia	Semi-structured interviews	Coding and thematic analysis	–	Examinations	Examination adjustments
Madriaga and Goodley (2010)	UK	Multiple	8	Asperger syndrome	Life history interviews through a longitudinal design	Grounded Theory and thematic analysis	Medical and social models of disability	Examinations	Examination accommodations
Majoko (2018)	Zimbabwe	Multiple	17	Variety of physical (e.g., arthritis, asthma) to cognitive disabilities (e.g., learning disabilities)	Semi-structured interviews	Coding and thematic analysis	–	Examinations	Extra time in examinations and separate testing rooms
McManus et al. (2017)	Australia	Multiple	12	Mental health disabilities	Semi-structured interviews	Content analysis	–	Examinations	Extra time in examinations and separate testing rooms
Milic Babic and Dowling (2015)	Croatia	Multiple	9	Physical disability, visual and hearing impairments	In-depth interviews	Content analysis	–	Examinations	Extra time in examinations
Moriňa et al. (2014)	Spain	Multiple	44	Physical disabilities, mental disabilities, sensory disabilities, health issues	Biographical-narrative methodology	Narrative analysis	–	Examinations	Examination accommodations
Mullins and Preyde (2013)	Canada	Multiple	10	Invisible disabilities (e.g., dyslexia, ADHD)	In-depth semi-structured interviews	Interpretative phenomenological analysis	–	Examinations	Examination accommodations
Nieminen and Pesonen, 2019	Finland	Mathematics	3	Dyslexia, ADHD, autism	Semi-structured interview	Theory-guided content analysis, narrative analysis	The Universal Design for Learning framework	Digital assessment, self-assessment, rubric, peer-assessment	–
Nieminen and Pesonen, 2019	Finland	Multiple	139	Disabilities, health issues, mental health issues, others (e.g., accidents)	Open-ended survey	Reflexive thematic analysis	Ableism and disablism	Examinations and essays	Examination accommodations, alternative assessment

Study	Country	Discipline	N	Types of disabilities[a]	Data collection methods	Data analysis methods	Theoretical framework used in analysis	Type of assessment	Type of assessment accommodations
									formats, flexibility with language, supportive technology
Nnama-Okechukwu et al. (2020)	Nigeria	Multiple	17	Learning disabilities	Focus group interviews	Thematic analysis	–	Examinations	Examination accommodations
Norris, Hammond, Williams, and Walker (2020)	UK	Physiotherapy	15	Learning disabilities	Focus group interviews, phenomenology	Thematic analysis	–	Examinations	Examination accommodations
Olave-Encina (2022)	Australia	International relations	1	Visual impairment	Semi-structured interviews and written responses	Narrative analysis	–	Multiple forms of feedback	–
Pfeifer et al. (2020)	USA	STEM disciplines	25	ADHD and learning disabilities	Semi-structured interviews	Coding	Self-advocacy	Examinations	Examination accommodations
Pfeifer et al. (2021)	USA	STEM disciplines	25	ADHD and learning disabilities	Semi-structured interviews	Coding	Self-advocacy	Examinations	Examination accommodations
Redpath et al. (2013)	Ireland	Multiple	13	Mental health issues, bulimia, depression, epilepsy, mobility disabilities, learning disabilities, autism, celebral palsy	Semi-structured interviews	Unclear	Obstacles for participation (Tinklin & Hall, 1999)	Examinations	Examination accommodations
Slaughter, Lindstrom, & Anderson, 2022	USA	Multiple	21	ADHD, learning disabilities, psychological disabilities, brain injuries, mobility and sensory disorders, systemic disorders	Semi-structured interviews	Coding and categorising	–	Examinations	Examination accommodations
Stamp et al. (2014)	USA	Multiple	12	Dyslexia	In-depth semi-structured interviews	Categorisation	–	Examinations	Examination accommodations
Stampoltzis et al. (2015)	Greece	Multiple	10	Dyslexia	Semi-structured interviews	Thematic analysis and Grounded Theory	–	Examinations	Examination accommodations
Stein (2013)	USA	Multiple	16	Psychological disabilities	Intensive interviews	Grounded Theory	–	Examinations	Examination accommodations
Tai et al. (2022)	Australia	Multiple	40	Unclear: students with an access plan	Semi-structured interviews	Sociomaterial analysis with a codebook	Sociomaterial theories	Examinations	Examination accommodations
Timmerman and Mulvihill (2015)	USA	Special education	2	Learning disabilities, blindness, celebral palsy, Asperger's Syndrome, ADHD	Observations and interviews	Content and thematic analysis	–	Examinations	Examination accommodations
Yusof et al. (2020)	Malaysia	Multiple	14	Mobility and visual impairments	Semi-structured interviews	Thematic analysis	Social model of disability	Examinations	Examination accommodations

a = We use the original terminology of the studies.

Declaration of competing interest

We have no known conflict of interest to disclose.

Data availability

Data will be made available on request.

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