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Open Journal per la formazione in rete

articoli

Becoming a teacher with a disability: a systematic review

Diventare un insegnante con disabilità: una revisione sistematica

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Abstract

The number of students with disabilities in higher education has increased along with growing literature which has explored their experience in university. However, little research exists on the unique issues and challenges posed by the courses that lead to a professional qualification, such as nursing and teacher training. Specifically, the purpose of this systematic review is to investigate the inclusion of students with disabilities in teacher training. Twenty-two primary studies, published between 1990 and 2018, have been included in the review. Five main thematic areas – a result of the synthesis of the available evidence – are discussed here. Suggestions for future research are also provided.

Keywords: systematic review; students with disabilities; teacher training; inclusion; higher education.

Sintesi

Il numero di studenti con disabilità nelle università è aumentato e, allo stesso tempo, una letteratura crescente ha esplorato le loro esperienze accademiche. Tuttavia, esistono poche ricerche sulle questioni e sfide uniche poste dai corsi abilitanti alla professione, come infermieristica e la formazione insegnanti. Nello specifico, lo scopo di questa revisione sistematica è indagare il tema dell'inclusione degli studenti con disabilità nella formazione insegnanti. Ventidue studi primari, pubblicati tra il 1990 e il 2018, sono stati inclusi nella revisione. Cinque principali aree tematiche – esito della sintesi delle evidenze disponibili – vengono discusse. Sono inoltre forniti suggerimenti per ricerche future.

Parole chiave: revisione sistematica; studenti con disabilità; formazione insegnanti; inclusione; formazione universitaria.

[1] Both authors have collaborated in the writing process of this paper; Rosa Bellacicco for the paragraphs 2, 3, 4, 5.1, 5.3, 5.4; while Heidrun Demo for the paragraphs 1, 5, 5.2, 5.5, 7. Both authors wrote the paragraph 6.

1. Rights and challenges for students with disabilities in higher education

The growing number of students with disabilities in postsecondary education (ANED, 2018; DZHW, 2018) is a sign of significant progress toward promoting their right to access all levels of education and improving equity, as intended by art. 24 of the UN-Convention for Rights of Persons with Disabilities (2006).

While the number of individuals with disabilities accessing Higher Education (HE) has increased, there has been a corresponding increase of published literature during the past 25 years (Madaus et al., 2018). Research highlights that most countries have implemented specific legislation to support students with disabilities (OECD, 2011). To date, Disability Support Services and academic staff are largely focused on providing reasonable accommodations to meet legal requirements for their access and participation. Accommodations are claimed to be individually tailored; they consist of special provisions for examinations and class, such as extended time, tutoring or Information and Communication Technologies (ICT) (Newman & Madaus, 2015).

Nevertheless, in some studies, students with disabilities describe their academic experiences as still stressful (Hong, 2015). Research highlights a limited use of inclusive teaching strategies (Lombardi, Vukovic, & Sala-Bars, 2015; West, Novak, & Mueller, 2016) or lecturers' poor understanding of the adjustments' policies (Hindes & Mather, 2007; Kendall, 2018; Moriña Díez, López, & Molina, 2015).

Studies showing reluctance towards disability's disclosure are also present in literature. These seem to indicate many reasons associated with this hesitancy, such as student's lack of the self-advocacy skills to request supports (Hadley, 2006); poor knowledge of legal rights and implications related to a lack of disclosure (Denhart, 2008); or frequent fear of stigma and exclusion (Claiborne, Cornforth, Gibson, & Smyth, 2011; Grimes, Southgate, Scevak, & Buchanan, 2019).

2. Professional courses and teacher training: issues and concerns

Specific issues for students with disabilities arise in professional courses, such as medicine, nursing or teaching. However, on general terms, literature on students with disabilities' experience on these programs is more limited than that on postsecondary education (Hill & Roger, 2016).

Existing research suggests difficulties related to negative attitude and lack of awareness about disability in the practicum placements, which results in students' great reluctance to disclosure (Morris & Turnbull, 2007; Nolan, Gleeson, Treanor, & Madigan, 2015). Academic staff and mentors report also insufficient knowledge on how to deal with these students, poor institutional aid, coupled with more workload and responsibility (Langørgen, Kermit, & Magnus, 2018). In this respect, Rankin, Nayda, Cocks, and Smith (2010) suggest that the provision of reasonable adjustments in practicum placement can be demanding for mentors due to their need to keep professional standards at an uncompromised level. In fact, professional courses must ensure that their candidates, with and without disabilities, are able to meet the stated standards of proficiency for each profession.

In teacher training too, opportunities and challenges for candidates with disabilities have to be interpreted in the context of standards and fitness to practice developed in many countries. These standards provide a frame for the benchmarking and assessment of teacher candidates on recruitment, retention and professional practicum. For example, in the UK,

student teachers obtain qualified teacher status by demonstrating professional competencies to comply with the standards of the Training and Development Agency for Schools (Griffiths, 2012). A competencies approach is used to frame a specific profile of *good teacher*, with an emphasis on basic literacy and numeracy skills (Riddick, 2003). Likewise, Canada (Sokal, Woloshyn, & Wilson, 2017), Australia (Barwood, Sanbrook, O'Rouke, Jones, & Thomas, 2018) and the US (Parker & Draves, 2018) have a list of professional standards that their teachers must be able to perform to be qualified as a graduate teacher.

These standardized requirements can cause tensions between the student's right for reasonable accommodations that claim for differentiation on one hand and the responsibility for training and certificating quality professionals on the other, whereas quality is defined through a standard profile of competences. Therefore, for these and other reasons, the inclusion of students with disabilities can be challenging in teacher training. The topic needs to be further explored.

3. The research

The aim of this study is to summarize and present, in a systematic way, the existing research evidence on the theme of students with disabilities' inclusion in teacher training.

3.1. Method

A systematic review is a method to synthesize the results of primary studies on a specific topic, using transparent and replicable procedures (Pellegrini & Vivanet, 2018).

In this systematic review – conducted between December 2018 and May 2019 – the relevant literature was identified by performing a query on teacher candidates with disabilities[2] in two electronic databases, Education Source and ERIC.

The studies were required to meet the following selection criteria to be included in the review: studies that (i) focus on students with any type of disability in teacher training (ii) consider initial teacher training on academic level (iii) concern teacher training both for special schools or mainstream schools and for all educational levels (from kindergarten to secondary schools) (iv) were conducted in any countries and languages (v) and were published between 1990 (when the literature began paying attention to the topic of disability in higher education) and 2018. To reduce bias no constraints were placed on the publication type and source (peer reviewed or academic journals only).

Online database searches yielded a total of 1.366 records after entering keywords. To integrate the identification of the relevant literature, the reference lists of all records included were searched for additional studies (the snowball method) and 4 papers were

[2] We used the following search terms ("teacher education" OR "teacher training" OR "teacher program" OR "school placement" OR "teaching internship*" OR "traineeship* for teacher*" OR "traineeship* for kindergarten teacher*" OR "traineeship* for preschool teacher*" OR "practicum for teacher*" OR "practicum for preschool teacher*" OR "practicum for kindergarten teacher*" OR "kindergarten placement" OR "preschool placement") AND ("student*" OR "candidat*" OR "applicant*" OR "pre-service") AND ("disabled" OR "disabilit*" OR "dyslexia" OR "dyslexic" OR "blind" OR "deaf" OR "physical impairment*" OR "hearing impairment*" OR "visual impairment*" OR "learning difficult*" OR "mental health disorder*").

added. After removing duplicates, two authors independently conducted the initial screening of 1.200 abstracts and titles and 63 papers were identified as potentially meeting the inclusion criteria. The next stage was their full-text inspection against the same eligibility criteria[3]. Finally, 22 primary studies were included in the systematic review (Figure 1).

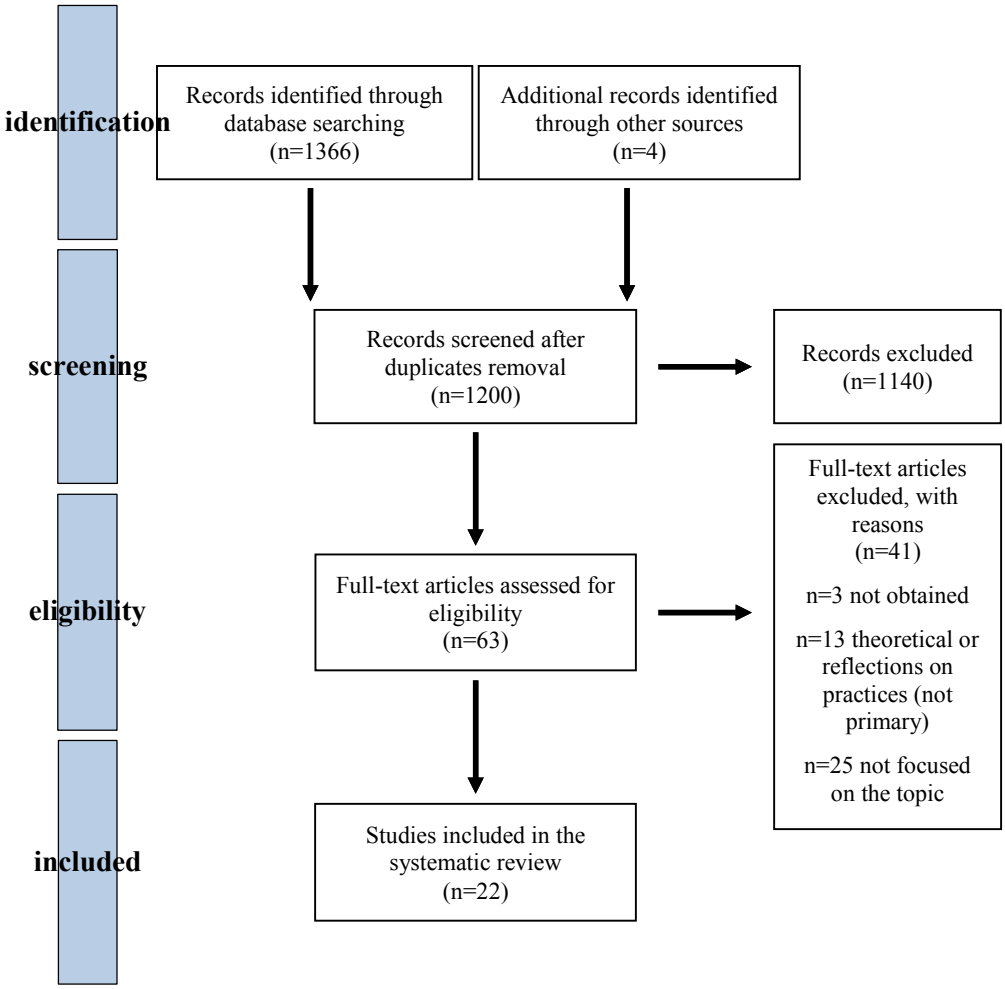

Figure 1. Studies' selection process. Adapted from Moher, Liberati, Tetzlaff, e Altman, 2009, p. 267.

3.2. Data analysis

The 22 empirical studies were analysed using content analysis, based on an inductive approach. Recurring topics emerging in the results across the articles were identified and coded under overarching thematic areas. Other dimensions (such as research design and

[3] Most of the studies that were discarded in this phase were not related to the main topic of the systematic review which was outlined above, but this had not been evident by only reading the abstracts (for example, they focused on faculties attitudes towards disability in higher education or on teachers with disabilities already in-service).

samples involved) were also classified. Figure 2, in the appendix, presents the selected studies and provides an overview of these data that were extracted.

4. Results

The studies were conducted in six countries: Australia, Canada, Ireland, Israel, the UK and the US. The majority were published in Canada (n = 5) and in the UK (n = 5).

Just over half of them used descriptive-qualitative research design (n = 11) and employed primarily semi-structured interviews. Ten studies provided quantitative data, using above all questionnaires; one was mixed-methods. Studies used different sources to acquire information. Most of them had students with disabilities as informants (n = 15) whereas only seven studies involved other participants, such as teacher training directors (n = 3), faculty members (n = 2), cooperating teachers (n = 1) or faculty advisors (n = 1). Nearly all used only one source of information (n = 20).

5. Thematic areas

From the analysis of the results presented in the 22 examined studies, 7 main thematic areas have emerged:

1. diversity in teacher training population;
2. access to teacher training;
3. accommodations during coursework and during practicum placement;
4. students' coping strategies;
5. barriers and facilitators in the academic experience;
6. disclosure;
7. the role of disability in the teacher professional identity.

In the following paragraphs, we will summarize the main pieces of evidence for each thematic area. Due to space limitations, in this paper we will not discuss thematic areas 4 and 5 referring to coping strategies and barriers/facilitators in the academic experience.

5.1. Diversity in teacher training population

Concerns about homogeneity in teacher training population, that is generally from majority-group socio-demographic backgrounds, and the recognition of the potential of diversity in enriching the teaching profession have appeared in three recent articles (Holden & Kitchen, 2018; Keane & Heinz, 2015; Keane, Heinz, & Eaton, 2018). Since data on the composition of the teacher training population seem to be missing in many countries, the studies under review address the issue gathering quantitative data relating to the socio-demographic backgrounds of applicants and entrants, to monitor the equity of access to the program.

The two articles by Keane and colleagues describe an Irish national research project. This tracks trends in teacher training population (in 2013 and 2014)[4] by means of a questionnaire

[4] They consider both undergraduate and postgraduate levels.

administered to all applicants and entrants with the aim to explore their profile in terms of gender, age, socio-economic group, nationality/ethnicity and disability (the second article in particular focuses on the latter). The study by Holden and Kitchen (2018), instead, directly collects statistics from Ontario Universities on all applicants who self-identified as a member of underrepresented groups (students with aboriginal descent, fist-generation students, students with disabilities, students from visible minorities and racialized students) from 2012 to 2016.

With regard to the number of students with disabilities entering teacher training, both the findings of the Irish and of the Canadian study show an increase, even though the reported numbers vary in a considerable way between the different institutions involved, from 0.85 to 13.8% (out of the total cohort of entrants in the two countries)[5].

5.2. Access to teacher training

Four articles present pieces of evidence on the selection process of the initial teacher training and the way the process may be adapted for student candidates with disabilities (Holden & Kitchen, 2018; Keane et al., 2018; Riddick & English, 2006; Sharoni & Vogel, 2007).

A first aspect that has been considered is how successful students with disabilities are. Existing data show that there is an increase in the number of students with disabilities succeeding in the selection process and entering the courses both in the data that represent the Irish and the Canadian situation, as illustrated by Keane et al. (2018) and by Holden and Kitchen (2018). In these two studies, the ratio between applicants and entrants in the different programs does not seem to show robust figures of disadvantages for students with disabilities, with an exception for one course in Ireland, the undergraduate primary initial teacher education, where applicants with disabilities were significantly less likely to be accepted. Nonetheless, it must be noted that the fragmentary nature of the presented data makes a generalization of these results difficult and fragile. A study on applicants and entrants in Israel, on the contrary, reports average lower scores for students with learning disabilities (Sharoni & Vogel, 2007).

Two articles investigate even further the way the selection procedures are (or not) adapted for students with dyslexia (Riddick & English, 2006) or, more in general, with learning disabilities (Sharoni & Vogel, 2007). From the two studies, taking place in the UK and in Israel, accommodations appear to be provided in many institutions for student candidates with learning disabilities, but in different ways, in different places and often considering a limited range of possibilities, as for example extra time – in both studies the most frequent type of accommodation.

Finally, the work by Riddick and English (2006) critically addresses the crucial role played by literacy in the selection process: commenting on the way selection procedures take place in the UK, the two authors highlight a risk of the standard discourse. They suggest that some qualities, like written English at the time of the study, are more likely to be given more importance and become a standard because they are relevant in the dominant

[5] More precisely, Irish data from different universities highlight that the proportion of entrants with disabilities to teacher training in 2014 varied from 4.8% (undergraduate primary programmes) and 13.8% (undergraduate post-primary programmes) in different universities. The proportion of students with disabilities in the Ontario universities makes up between 0.85% and 6.90% in 2014 instead.

discourse regarding *good teachers* or appear to be more assessable. The choice results in considering *deficient* anybody who does not fit the standards, with the risk of overlooking other qualities or abilities that might be equally important in the practice context. This is why Riddick and English conclude with the recommendation of developing more meaningful forms of assessment that allow student candidates to show their potential teaching competence within more authentic situations.

5.3. Accommodations during coursework and practicum placement

The provision of accommodations – with 11 articles discussing it – is the most addressed issue in the selected works (Baldwin, 2007; Barwood et al., 2018; Csoli & Gallagher, 2012; Griffiths, 2012; Komesaroff, 2005; Lebel et al., 2016; Leyser & Greenberger, 2008; Leyser, Greenberger, Sharoni, & Vogel, 2011; Morgan & Rooney, 1997; Parker & Draves, 2017; Sokal et al., 2017).

Students with disabilities indicate that accommodations to lessons and examinations are available (with one exception referring to the full access to interpreters in one of the older studies; Komesaroff, 2005) and that there is no stigma associated with receiving them (Csoli & Gallagher, 2012; Griffiths, 2012).

Many students stress the importance of technology to overcome their difficulties and to develop coping strategies, that can be later used also in the practicum placement (Morgan & Rooney, 1997). However, in most of the reviewed articles, the provision of accommodations, also technological ones, seems to be less common and more problematic during practicum placement than during coursework. For example, student teachers interviewed by Griffiths (2012) struggle to use their laptops and specific software programs due to problems with ICT compatibilities and classroom configuration. Similarly, other students with learning and visual impairments complain about the lack of assistive software and accessible music during the practicum placement (Csoli & Gallagher, 2012; Parker & Draves, 2017).

For what concerns teacher training directors and faculty members, involved in three studies conducted in the UK and Israel (Baldwin, 2007; Leyser & Greenberger, 2008; Leyser et al., 2011), they all express a strong willingness to provide adjustments for coursework and examinations, especially if the chosen ones do not change the nature of the task or alter the standards, as it is the case for extra time, note-taking in class, or technological adaptations. Accommodations that change the requirements of the program (adapted grading or an alternative type of exam) receive a lower ranking and are considered less effective, ethical and fair.

While confirming findings emerged through the students' voice, academic staff' perspective shows that accommodations that adjust the field experience (hand selection of cooperating teacher) are less available and more likely to raise ethical concerns and disagreement (Baldwin, 2007), especially in the last stage, when student teachers must demonstrate autonomy and professional standard skills (Lebel et al., 2016). Likewise, although the faculty members involved by Leyser and Greenberger (2008) share the idea that reasonable accommodations should be made during practicum placement, the longitudinal trend shows that they have had a less favorable attitude in more recent times (Leyser et al., 2011). Finally, ethical concerns for accommodations in the practicum placements emerge also among Canadian directors participating in the study by Sokal et al. (2017).

These contradictory views could be explained also by the fact that while, according to the law, there are clear policies about accommodations during the coursework, there are no clear guidelines regarding accommodations during practicum in many countries (Griffiths, 2012). Faculty advisors involved in the study by Csoli and Gallagher (2012) consistently remarked they did not know the nature of accommodations to provide during practicum placement. Another practical example of this issue is the ambiguous role of assistants/interpreters in class. Findings reported by one study (Barwood et al., 2018) suggest the necessity of a precise protocol for their involvement in the classroom, on one hand with some knowledge in the learning area so that they can choose appropriate language while interpreting for the class and, on the other hand, without becoming obstructive and perceived as a sort of second teacher.

5.4. Disclosure

Six studies discuss the topic of the disclosure of disability in teacher training (Csoli & Gallagher, 2012; Griffiths, 2012; Macleod & Cebula, 2009; Riddick, 2003; Riddick & English, 2006; Sokal et al., 2017).

Teacher candidates seem to be reluctant to disclose it, in particular during practicum placement. In Riddick's (2003) study, 4 out of 5 interviewed student teachers with dyslexia report to be very cautious about this decision and some of them choose to disclose it only after having worked closely with cooperating teachers. The circumspect attitude is confirmed also in Griffiths's interviews with six teacher candidates with dyslexia where no participant disclosed it at school prior to placement experience. Similarly, only a fifth of the students with disabilities participating to the survey by Macleod and Cebula (2009) declare to tell faculty advisors about their difficulties, and only around a half of them disclose the disability during the practicum placement.

In general, student teachers stress that they weigh the advantages and disadvantages of declaring anything before deciding to do so. The disclosure seems to be a complex process made up of negotiations and evaluations of attitudes of all people involved (Macleod & Cebula, 2009; Riddick, 2003). The most common worries concern the lack of awareness about the disability and adverse attitude in the class settings; thus, students are afraid of being viewed negatively and stigmatized (Griffiths, 2012; Riddick, 2003; Sokal et al., 2017). In the application process, disclosure can be seen also as a risk, arising from the evaluation of suitability for teaching based on the literacy standards (Riddick & English, 2006). Only in one study, some students choose not to disclose it because they considered that their impairments would not affect the professional performance and the few who decided to do it received positive responses (Macleod & Cebula, 2009).

On the contrary, faculty advisors and teacher training directors consider the disclosure essential for the accommodations to be delivered (Csoli & Gallagher, 2012). Disclosure is cited by the directors interviewed by Sokal et al. (2017) as a prerequisite for appropriate supports, and ultimately for a successful practicum placement. Likewise, the non-disclosure is considered among the main barriers and the development of specific disclosure form for the practicum is suggested.

5.5. The role of disability in the teacher professional identity

Seven articles present studies with results that contribute to an understanding of the role of personal experience of disability in the development of the teacher professional identity

(Bailes, Hulsebosch, & Martin 2010; Duquette, 2000; Dvir, 2015; Gabel, 2001; Komesaroff, 2005; Parker & Draves, 2017; Riddick, 2003).

In most of these studies, the elaboration and integration of the experience of disability seem to play an important role for the development of the professional teacher identity in students with a disability. Gabel (2001), for example, shows how the three students with disabilities she has interviewed in depth reflect their pedagogical knowledge in the light of their past experience with disability and concludes with an invitation to teacher training staff to consider the importance of sensitively facilitating an open reflection on this "identity marker" (Gabel, 2001, p. 42) in student teachers with disabilities. In Komesaroff's study (2005) on in-depth interviews with two student teachers with hearing impairments in Australia the topic emerges as a need expressed by the students to have the opportunity to reflect more on the *Deaf Culture*.

The idea that integrating the disability in one's own professional identity can be a form of empowerment emerges clearly in several studies. The choice of becoming a teacher can be a way to transform a negative student experience of exclusion or stigmatization in the earlier school career into a future teacher's strength of empathy with students that experience difficulties (Duquette, 2000; Dvir, 2015; Gabel, 2001; Riddick, 2003).

Only the findings by Bailes et al. (2010) related to the analysis of reflective journals of the practicum experience of two deaf students do not find entries related to the expected theme of the Deaf Culture. This result puts the generalization of the importance of an explicit reflection of disability in the development of the professional identity in more cautious perspective.

Finally, one recent study (Parker & Draves, 2017) on the interviews and analysis of practicum journals of two students with visual impairments reflects on the unspoken belief of society that sight is essential for teaching. This belief is interpreted as a possible reason for the two students to decide to abandon the idea of becoming school teachers. This interpretation introduces the issue of the way the teacher's professional role is conceived in society as a possible element of implicit exclusion.

6. Discussion

Looking retrospectively at the summarized evidence, first of all it's a surprising finding that only a small number of recent studies has considered the issue of diversity in teacher training population. The homogeneity of the teaching profession is indeed an international phenomenon (Santoro, 2015; Schleicher, 2014). Thus, the topic of the diversity in teacher training population was supposed to have a more central position.

Moreover, it's interesting to note that the issue posed by the three articles refers to diversity in teaching population and introduces two new aspects. Firstly, the category of disability is embedded in the wider idea of diversity and becomes one among other minority groups that needs to be tracked since experiencing a risk of underrepresentation in teacher training. Secondly, the idea that a greater diversification of the teaching force is connected with benefits for the whole school community, especially for being positive role models for minority-groups students and challenging stereotypes (Pritchard, 2010; Villegas & Irvine, 2010), puts the issue of persons with disabilities attending teacher training in a different light. In fact, it transforms the topic from a challenge related solely to the student teacher's

right for inclusion to one related also with a collective benefit related with a diverse teachers' population.

With respect to the figures reported, the number of students with disabilities entering teacher training programs seems to be encouraging, considering that teachers with disabilities were "a silent and invisible minority" (Brock, 2007, p. 9) for a long time. However, the very different rates emerged in the studies suggest that more work in sharing – between diverse countries but also between diverse institutions within the same country – a definition of disability and of the way data is tracked is needed. In addition, the main international reports (ANED, 2018; DZHW, 2018) show statistics on the participation of students with disabilities in higher education, but such data disaggregated by types of courses or trainings are rarely available. The number of persons with a disability applying and entering teacher training programs in other states, beyond the two countries explored in our review, does not seem to be known. Thus, there is a primary need for collecting these data, as a first step to monitor the potential under-representation of students with disabilities and, more widely, the diversity in teacher training population.

Focusing on the thematic area of access, also in this case, the lack of reliable data on applicants and entrants' ratios of teacher candidates with disabilities is a concern. This is even more urgent as some of the existing findings in the only two studies conducted seem to suggest that applicants with disabilities might be less likely to be accepted in programs than those without. Furthermore, looking at the way selection procedures are adapted for students with learning disabilities, the need for rethinking them becomes quite evident. Firstly, clear differences among different institutions within the same countries exist and challenge the issue of equal opportunities for all students. Secondly, a more general critical reflection on the idea that some isolated abilities – and only those – that are tested in the selection procedure can predict the teaching suitability could be useful in order to move towards a broader range of alternative forms of assessment, which allow different candidates to demonstrate their different predisposition to become a *good teacher*.

Furthermore, consistent with previous research in HE (Kendall, 2018; Moriña Díez et al., 2015), our review highlights that the provision of accommodations is not a *neutral* action. The results reveal, from the viewpoint of both students and academic staff, positive attitude toward traditional accommodations, above all during the coursework. However, directors and faculty members are reluctant to provide accommodations they perceive would affect course standards and requirements. They view themselves as gatekeepers who are responsible for the preservation of academic standards, as shown in other studies (Hindes & Mater, 2007; Jensen, McCrary, Krampe, & Cooper, 2004). This aspect is amplified in the practicum placement, as instance where the standard skills and professional knowledge must be put into practice and, at the same time, where students with disabilities are more likely to show problems (Baldwin, 2007). Coherently, our findings display that concerns and disagreement among academic staff about the provision of accommodations become stronger during this stage.

On the basis of these findings, the need for a systematic conceptualization of *reasonable* accommodations, both in coursework and practicum, and the development of clear policies in placement settings emerges (Griffiths, 2012). In fact, support guidelines during practicum are reported to be uncertain, leaving faculty members and advisors, as well as cooperating teachers, with conflicting demands (Sokal et al., 2017). As Langørgen et al. (2018) explain, the uncertain situation enhances the risk that academic staff become more "rigid" (p. 10) toward students with disabilities. Clear and defined guidelines seem to be a solution, on one hand, on the other hand, a more flexible interpretation of essential teaching

functions and a broader understanding of how teachers can meet these seems to be essential. The flexibility provided to students with disabilities in offering plural ways of exhibiting the specific expected behaviors and tasks may positively influence their achievement of the essential teaching functions (Karp, Anderson, & Keller, 1998; Papalia-Berardi, Hughes, & Papalia, 2002; Parker & Draves, 2018).

With regard to disclosure, the reluctance to reveal the disability confirms what established research results have been affirming for a long time (Claiborne et al., 2011; Grimes et al., 2019). Among the different reasons already described potentially associated with this hesitancy, our review points to the student's fear of a stigma, suggesting that the medical model of disability still frames the reluctance to disclose both during coursework and, above all, in practicum settings. However, choosing to not reveal, in order to avoid stigma, could preclude the reception of accommodations and, ultimately, the achievement of professional standards.

The topic presents different implications:

- the legal ones, without disclosure there is no responsibility for the institution to offer accommodations, yet academic staff remain unaware of the number and the needs of their students with disabilities, which could provide also a risk for candidates and children/patients' safety (Macleod & Cebula, 2009; Morris & Turnbull, 2007);
- the cultural ones, a reflection about the benefits of informing parents and children in the schools which accept a student teacher with disability is emerging (Barwood et al., 2018);
- the personal level, while currently there are no clear disclosure procedures, universities could be more proactive in encouraging and accompanying the students in this decision (Sokal et al., 2017).

The intricacy of these dimensions indicates the need for much greater discussion regarding this topic.

Strictly connected with the disclosure aspect is the integration of disability in the professional identity.

The findings of the seven studies can be categorized into two groups: those – six, the majority – that address the topic of the development of the teacher professional identity of students with disabilities looking carefully at the reflective processes done by the students themselves in the effort to integrate disability in the expected professional identity and one study that suggests the need of rethinking the way the professional identity is conceived in society because it might implicitly exclude persons with some characteristics, as for example a disability.

Thus, on one hand, the studies underlined the importance of disclosure and open reflection on the personal experience of disability for not only constructing a teaching professional identity that considers also the disability but also elaborating and transforming experience with disabilities in conscious choices for priorities in the future teaching profession. On the other hand, the integration of disability in the professional identity cannot be seen as a solely individual task, but it needs to be addressed culturally, triggering an open discourse on the essential functions of teaching and how disability can be part of them.

7. Limitations and conclusions

To conclude and complete this reflection, it is important to state that this review includes some limitations. First, since all studies that met our criteria, regardless of their methodological quality, were included, caution is needed when interpreting their results. The authors planned to review their quality by making use of the criteria by Kmet, Lee, and Cook (2004); however, at this time, this analysis is still preliminary.

Second, there is a risk of bias across studies within the review. Even if the systematic review was not restricted to publications in English language, all of the studies included (except one) were published in English. In this respect, it is also important to consider that the studies retained spanned only across six countries, nearly all English-speaking countries. Future research should explore the topic in other countries to compare data between different cultures and understand how the theme may vary in them.

Finally, while the direct contribution of students with disabilities in issues concerning them in HE is very positive (Seale, 2017), the voices of other informants (such as faculty advisors or cooperating teachers) are less represented in the current literature and only one type of informants is actually involved in each study. Future research is critically needed to involve other informants and use more sources of information, in order to improve the reliability of collected data.

Appendix 1

Authors, year, country	Focus	Research design and data gathering	Sample	Key findings
1. Morgan & Rooney (1997) (UK)	To describe strategies developed by teacher students in overcoming some areas of concerns after having received individual tuition	Qualitative (interviews with open-ended questionnaire)	10 teacher candidates (6 of them with dyslexia)	Teacher candidates developed an array of strategies to overcome the difficulties related to their dyslexic learning profile (e.g. spelling, organising activities/devising lesson plans, preparation of worksheets)
2. Duquette (2000) (Canada)	To explore if and how a disability and previous school and life experiences influence early teaching practice	Qualitative (questionnaire with open-ended items; semi-structured interview and observation)	4 teacher candidates (with learning, physical disabilities and low vision)	Teacher candidates had negative school experiences. They had accepted their disabilities. School/ life experiences shaped their teaching practice. Finally, they felt confident as teachers and did not replicate the teaching methods to which they had been exposed
3. Gabel (2001) (US)	To reflect on personal experiences of teacher candidates with disabilities and the ways in which those experiences inform their pedagogical knowledge	Qualitative (semi-structured interview)	3 teacher candidates (with learning disabilities, hearing impairment and leukemia)	Teacher candidates had an internal conflict about defining or not him/herself as a student with disability. Most of them were constructing their "sense of teacher" integrating their experiences as people with disabilities

4. Riddick (2003) (UK)	To describe the perspectives of dyslexic teachers and trainee teachers on some issues relating to their role as a teacher	Qualitative (semi-structured interview)	8 teachers, 5 teacher candidates (with dyslexia)	Dyslexic students/teachers described lots of negative school experiences (literacy difficulties). The decision of starting the teaching career was connected with the desire of offering children a better school experience than they had; dyslexia could be an advantage. The disclosure was ambiguous: teacher candidates experienced negative attitudes; sometimes they did not reveal
5. Komesaroff (2005) (Australia)	To analyze the experience of deaf students in teacher training	Qualitative (in-depth interview)	2 teacher candidates (with hearing impairments)	Both students reported difficulties in obtaining interpreters and the ambivalent experience of being perceived by lecturers as a "deaf student". For what concerns the curriculum concerns, they would have expected to follow their own interests more (e.g. for Deaf culture), but the academic staff decided to leave assignment tasks and the requirements for practicum unchanged
6. Riddick & English (2006) (England and Wales, UK)	To investigate the selection process of teacher training for dyslexic students, with a focus on literacy skills	Quantitative (questionnaire)	26 teacher training Directors/ admission tutors	Literacy skills are assessed through written tasks in most cases or through the applicant form. 75% made special arrangements for students with dyslexia. Around two thirds of the providers were positive about the writing task being part of the selection process; a few had doubts about potentially good teachers excluded by the standard test. For what regards the disclosure, responses indicate that disclosure in the selection process is problematic for candidates and sometimes avoided
7. Baldwin (2007) (US)	To investigate teacher training Directors' perception of the availability, effective and ethical suitability of accommodations for student candidates with learning disabilities	Quantitative (questionnaire with two open-ended questions)	60 teacher training Directors	The most used accommodations were those that did not modify the nature of tasks the standard of expected work, whereas accommodations that changed grading or adjusted practicum placement were considered both less effective and ethical. The field experience emerged as the first instance when the candidate's limits become apparent

8. Sharoni & Vogel (2007) (Israel)	To look at the applicants who took the entrance exam and enrolled students in teacher training, comparing results of students with and without accommodations	Quantitative (questionnaire, secondary analysis of databases and documents analysis)	4,851 students who took the entrance exam (410 with accommodations, namely students with learning disabilities) and 1736 enrolled students (152 with accommodations)	8.5% of applicants received accommodations; most of them had a recent assessment history (only one-third had undergone evaluations prior to the testing unit). Approved accommodations included mostly if not only extended time. The students with accommodations had significantly lower test scores
9. Leyser & Greenberger (2008) (Israel)	To examine faculty members' attitudes and practices towards college students with disabilities in teacher training and the impact of selected background variables	Quantitative (questionnaire)	188 faculty members in 7 colleges	More than half of the faculty members did not have any training on disabilities. Faculty members were willing to provide accommodations (in particular technological). The willingness to provide accommodations was higher than the actual provision. They were supportive of accommodations both in the selection process and in field experience; however, they didn't want to modify the grade point average required for training entry
10. Macleod & Cebula (2009) (Scotland, UK)	To examine the decisions around disclosure of disability and experiences on practicum placements	Quantitative (questionnaire)	115 teacher candidates with disabilities (out of 721 responses of teacher candidates without disabilities)	Around half of the students disclosed their disability at university, less did so to their placement tutor. Some students chose not to disclose: they felt that their impairments would not affect their work; others were anxious about the response they would receive. Disclosure was a process made up of a series of negotiations and decisions. For the majority of those who revealed it during the placement, the responses had been positive; for a few students, some aspects were negative (lack of understanding by school staff)
11. Bailes, Hulsebosch, & Martin (2010) (US)	To compare the contents of reflective journal writings of deaf student teachers with established literature about reflective journals of practicum experiences	Qualitative (documents analysis)	6 teacher candidates with a hearing impairment	Some emerged topics confirm those described in established literature as relevant: 1) pedagogy, specifically the integration of theories and classroom practices and 2) good relationship with students. Conversely to

				literature, classroom management was less relevant for deaf students, whereas their attempt to meet the students' needs was particularly evident. Deaf teacher candidates showed a peculiar ability in reflecting independently from the cooperating teachers
12. Leyser et al. (2011) (Israel)	To investigate changes in faculty attitudes towards accommodations for students with disabilities in teacher training (differences between two already published surveys 10 years apart)	Quantitative (questionnaire; longitudinal)	116 faculty members in 1996/1997; 188 in 2006/2007	No significant differences were found in faculty willingness to provide accommodations considering both instructional, technological and examination accommodations. Faculty members expressed more concerns regarding their fairness in the later study. Less than half were interested in receiving more information; in the earlier study mostly about disabilities, in the second on legal mandates
13. Csoli & Gallagher (2012) (Ontario, Canada)	To examine the factors that help teacher candidates with learning disabilities in teacher training and the role of faculty advisor	Qualitative (semi-structured interview)	2 teacher candidates with learning disabilities and 2 faculty advisors	During coursework, teacher candidates received accommodations; during practicum placement, they needed to be facilitated by the cooperating teachers and they received different amount of support. The decision to disclose depended on the perceived cooperating teachers' tolerance for learning disabilities
14. Griffiths (2012) (UK)	To explore the practicum placement experiences of teacher candidates with dyslexia	Qualitative (semi-structured interview)	6 teacher candidates with dyslexia	Teaches candidates faced additional challenges, despite the adoption of management strategies. No participant had discussed disclosure with tutors' pre-placement (lacking of tutor's awareness, fears of being stigmatized). Further difficulties were caused by unclear understanding of some requirements on practicum
15. Dvir (2015) (Israel)	To explore the construction of personal and professional identities among student teachers with disabilities	Qualitative (documents analysis; life stories)	3 teacher candidates with physical and hearing disabilities	The decision to become a teacher showed a transition from the narration of a sense of failure and exclusion to a sense of empowerment. In the last stage, teacher candidates made peace with their disabilities and recognized them as "added value" as future teachers
16. Keane & Heinz (2015) (Ireland)	To examine the socio-demographic backgrounds of 2013 and 2014 entrants to teacher training	Quantitative (questionnaire)	521 teacher candidates in 2013 and 370 in 2014	While the proportions of entrants reporting a disability in the samples were very small, an increase in the number of all entrants reporting one or more

				disabilities from 2013 to 2014 from 5.9% to 8.9% was found (across seven institutions)
17. Lebel et al. (2016) (Québec, Canada)	To analyse the cooperating teachers' tensions regarding accommodations, the challenges and their needs in supporting students with disabilities during practicum	Mixed methods (questionnaire and focus group)	71 cooperating teachers (35 of which were involved in focus groups)	Cooperating teachers did not want to redefine the placement requirements and a high percentage was against the provision of accommodations, especially in the later stages. Among the tensions, they emphasized the concerns about the pupils' safety and a lack of openness of the school setting to accept a candidate with a disability
18. Parker & Draves (2017) (US)	To describe the teaching experience of two student teachers with visual impairment	Qualitative (semi-structured interview and documents analysis)	2 students with a visual impairment	The efforts to self-adjust in a sight-based reality and the sensation to be overwhelmed by the role of music teachers, due to school settings' reluctance to find alternatives to sight-based strategies, were found. At the end, both teacher candidates chose to teach in musical theater and church spaces, more flexible than schools
19. Sokal et al. (2017) (Canada, Western)	To understand, in teacher training Directors' perceptions, barriers and supports related to practicum placements of students with disabilities	Quantitative (questionnaire with open-ended questions)	10 teacher training Directors	The following barriers during practicum were indicated by Directors: 1) non-disclosure by students 2) tensions between accommodations and standards, including a lack of clear standards. Among the supports: care in placement selection, team work, communication, disclosure and planning, knowledge on disability laws
20. Barwood et al. (2018) (Australia)	To describe practicum experience of a health and physical education teacher candidate with hearing impairment	Qualitative (semi-structured interview)	1 teacher candidate with hearing impairment	4 main insights emerged: 1) issues relating to being deaf, such as developing strategies for regulating voice volume and facing situations like roll call; 2) the need for a preparation of the interpreter, both for the discipline and for the behavior management; 3) challenges of inclement weather in relation to hearing aids; 4) need to inform parents and kids about the presence of a deaf student teacher
21. Holden & Kitchen (2018) (Ontario, Canada)	To examine the current state of representation for underrepresented groups in Ontario teacher training	Quantitative (analysis of data on applicants and entrants tracked by universities)	13 universities	In most universities, data showed an increase in the proportion of students with disabilities accepting the offers of admission. Instead, at the application stage, in particular in one university, the number

				of students with disabilities applying to program decreases, while the total number of them entering the program grew
22. Keane, Heinz, & Eaton (2018) (Ireland)	To explore the profile of teacher training applicants and entrants with and without a disability in 2014, the socio-demographic backgrounds of both groups, and factors such as higher education entry route, academic self-confidence and teaching experience	Quantitative (questionnaire)	4695 applicants and entrants to undergraduate primary and post-primary initial teacher training	In 2014, the data showed that students with disabilities were between 4.8% and 13.8% of the total cohort of entrants to teacher training, confirming an increasing trend from previous studies. On the contrary, applicants with disabilities were less likely to be accepted into undergraduate primary teacher training than were those without

Figure 2. Overview of the studies included in systematic review[6].

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[6] This figure only reports findings related to the categories discussed in this paper.

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