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Journal article

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*Student teachers' positive perceptions of characteristics and personality of people on the autism spectrum -
"Challenging in a positive way"*

by

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Abstract

Purpose

This paper presents quantitative and qualitative findings from an interdisciplinary research project exploring student teachers' positive perceptions of people on the autism spectrum.

Method

The set of findings reported in this paper asked 704 student teachers from one university in England (n=191), Finland (n=251) and Sweden (n=262) to write down the first three words they thought of to identify the characteristics of people on the autism spectrum. Data was analysed using a multi-layered, deductive co-rated coding approach. Through this approach repeated words were extracted as were negative and undetermined words, leaving only positive words.

Result

Examination of the positive words identified found differences in the manner student teachers focus on the positive characteristics of people on the autism spectrum as this is an understudied area of research.

Conclusion

Finnish student teachers more frequently used language to describe the positive characteristics of people on the autism spectrum that reflected their perception of learning being their primary professional role. However, English and Swedish student teachers used language that showed they perceived their role as encompassing the social and emotional development of their pupils, with little reflection about the positive characteristics of people on the autism spectrum as learners.

Keywords

Autism spectrum, characteristics, student teachers, perceptions, inclusion, positive

The context of teacher education within a rapidly changing world generates many challenging questions for teacher educators who are tasked with preparing student teachers for their chosen future profession. Autism¹ is a highly complex and diverse condition, which affects people in different ways, necessitating professionals to see everyone on the autism spectrum as an individual with their own ‘ability, potential or needs’ (The British Psychological Society, 2021, p.7). Autism’s prevalence is also reported to be rising, currently occurring in approximately one per cent of the global population (ibid). It therefore can be surmised that student teachers will regularly work with pupils on the autism spectrum during both their practical placements prior to qualification and then as qualified professionals throughout their teaching careers. Current legislation in England², Finland, and Sweden, supports the principle of ‘inclusive education,’ and therefore celebrates difference and values neurodiversity. However, as in every other community, it was acknowledged by the researchers that student teachers would have differing views on inclusion. Thus, it is essential that future initial teacher education (ITE) programmes avoid the continuation of many teachers feeling ill prepared and less positive in successfully including and taking responsibility for all pupils including those on the autism spectrum (Hellawell, 2015; Webster & Blatchford, 2017; Allan & Youdell, 2017).

Previous research has found that teacher perception and pupil-teacher relationships are an important factor in determining whether teachers can include pupils on the autism spectrum successfully (Caplan, Feldman, Eisenhower & Blacher, 2016; Nah & Tan, 2021). Likewise, studies have been completed which have focused on student teachers’ attitudes towards the inclusion of pupils on the autism spectrum, through the exploration of their knowledge and beliefs about autism (e.g., Talib & Paulson, 2015; ██████████). It is also necessary for teachers to reflect on their use of language and consider the ethical implications of describing pupils using normative terms (Mosvold & Ohnstad, 2016). As stated by Vygotsky (1962, p.51) ‘thought development is determined by language’. With this research knowledge it was thus considered valid to examine the vocabulary (words) used by student teachers when asked to provide three words to describe their perceptions about people, and pupils specifically, on the autism spectrum. In doing so it was surmised that it would be possible to explore their perception of pupils with autism through their use of language (Garrett, 2010). Evidence informed findings

¹ Consulting with research and current views of academics and pupils with autism it was decided that for the purposes of this paper to use the language of ‘autism’ or ‘on the autism spectrum’ throughout to describe people diagnosed with this condition (Kenny et al, 2016) as no one term is universally accepted.

could then be utilised to illustrate to teacher educators how they might enhance initial teacher education and practice programmes to aid the advancement of inclusive education.

Literature review

Inclusion, teacher education and autism

Described as a ‘proactive process’ ‘in which the voices of excluded groups would be heard and acted upon, and the mainstays of privilege and power would be fractured’ (Thomas & Loxley, 2022, p.1) full inclusion gathered momentum and acceptance in the second half of the twentieth century. Further advances in policy, social acceptance, and attitudes, have continued into this century, but there remain ‘strongholds of power’ (ibid) and of culturally persistent views of difference which continue to resist the aim of accomplishing full inclusion. Wood (2019) showed how children on the autism spectrum, who were said to be ‘included’ in school, continue to experience exclusion through part-time schooling plans, an alternative curriculum and through restricted access to whole school activities, such as trips and clubs. This indicates that individuals with a learning, health, or social difference, continue to remain marginalised with inequitable access to services, and even when action is taken this is frequently only nominal.

It therefore can be argued that teachers have a key role in enabling the reconceptualization of ‘special’ (i.e., special educational needs) (Thomas & Loxley, 2022, p.2) or ‘different’ to embody inclusive practice as we move forward, challenging ‘age-old’ views of difference, including questioning the continuing long-term use of certain vocabulary, assessments, methods of teaching and resources. However, this is by no means an easy task for teachers in many countries, as frequently in addition to challenging the relevance and impact of long-established practice, they also need to ‘manage’ the growing marketisation of education and the performative demands of governments which conflict with ‘inclusion’ (Tomlinson, 2018).

Inclusion and autism teacher education in England, Finland, and Sweden

Inclusion

In England, during this century education policy has continued to state its commitment to inclusion and inclusive practice, although the purpose of inclusion as expressed in documentation has subtly changed to reflect the political ideology of the government in power (DfES, 2001; DfE, 2011; HM Government, 2022). Like in other countries, recent British Governments ‘are driven by accountability and market-based economic ideology’ (

), thus supporting an environment where inclusive practice is inconsistent, incoherent and inequitable (Gatto, 2019). Also, the Special Educational Needs and Disability (SEND) system which provides additional funding and specialist provision focuses primarily on identifying ‘a child’s differences and difficulties,’ and functions completely separately to core Education provision (DfE and DoH, 2015). By being assessed as requiring an Education, Health and Care plan (EHC plan) as part of this process the service users (parents and pupils) expect to have access to additional resources and support from a specific teaching assistant or specialist professionals. Such expectations result in pupils frequently being individually taught or supported by a teaching assistant, in small groups external or separate from the rest of the pupil’s class, or in specialist provision. This in itself could suggest to teachers that they do not ‘need’ to be able to teach and take responsibility for all pupils including those with a special educational need. It is also noteworthy that teachers have not generally been highly valued in English society (Rhodes et al, 2004; Simmie, 2021) and the various governments have made veiled comments that intimates that schools are places where children and young people can be safely left by parents from early morning (8am) to early evening (e.g. 6pm) incorporating breakfast, after school and holiday clubs, and where employees of the future can be ‘grown’ (Dyson, 2011).

The idea of education for all has been a hallmark of Finnish education policy since the first Compulsory Education Act 1921 and practically every pupil is served in the same comprehensive school system (e.g., Pulkkinen & Jahnukainen, 2016). Thus, the Finnish basic education system has achieved an appropriate level of inclusion as practically every child enrolls in the same system and the principle of being able to attend a neighborhood school also applies to students with disabilities (Honkasilta, Ahtiainen, Hienonen & Jahnukainen, 2019; Lempinen & Niemi, 2018). However, although the number of pupils with special educational needs in regular classrooms has increased steadily during the last two decades and the number of pupils in special schools has decreased, special education in small groups (i.e., self-contained classrooms) is still quite common (EASNIE, 2018).

In the so-called January agreement in Sweden (January agreement, 2019), politicians stated that the idea of inclusion had gone too far and they wanted it to be easier for special educational support to be given in small groups. This could be considered as a misconception of the term inclusion, but this discourse has had implications for children and pupils on the autism spectrum. Bölte et al. (2021) conclude in their study involving 4778 educational staff members that inclusive practice implementation and readiness to teach students with neurodevelopmental disorders is sparse. According to SFS (1993), individuals have the legal right to support and

services according to the law on support and services [LSS] to certain disabled people. The National Board of Health and Welfare (2022) in Sweden published a report in October, 2022, stating that Sweden needs a national competence center for knowledge on intellectual impairment and autism.

Student teacher education credentials

Teaching is frequently considered an afterthought or a job to do until you can get a better one by English society and politicians (Spruyt, 2021) and it can be posited that this is reflected in the initial training programmes of Government. In England, although there continues to be a few BA (Hons) Education degrees, initial training for teaching is increasingly either a one-year university course (PGCE) entered on completion of a subject specific degree (three years), or 'on the job' training within a school, with limited University input to help provide and embed a holistic theoretical understanding of child development, sociology and psychology, as well as curriculum knowledge. With such limited timeframes to learn the craft it can be posited that securing a professional identity and values is complex for teachers working within the English state system, especially alongside political and business (marketisation and attainment) and social drivers such as inclusion which are so diverse.

Finnish teachers have been trained in universities since 1979. After 4 to 5 years training students earn a master's degree and a qualification to teach in the primary or secondary level depending on students' major subject and programme. As teacher education departments are working within universities the training programmes have a solid scientific ground and a strong emphasis on research-based education (Hökkä & Eteläpelto, 2014; Tirri, 2014).

Training programmes include content which introduce the theoretical concepts of inclusive education, diagnosis, disability etc. However, as teacher education departments are autonomous, the content of the programmes can differ considerably between institutions (Rasmussen & Bayer, 2014).

Teacher education in Finland is very popular (Samuelsson & Lindblad, 2015) and every year there are a high number of applicants in teacher education programmes in different universities. The high number of applicants and multipronged entrance exams make sure that the selected students are skillful, motivated and of high academic ability.

According to the Swedish Council for Higher Education (2022a) professional qualifications can be pursued within a Degree of Bachelor in Preschool Teaching, 3.5 years; Degree of Master of Arts in Primary

Education, 4 years, and Degree of Master of Arts/Science in Secondary Education or Upper Secondary Education (Subject teacher), which can be 4,4,5 or 5 years. Additionally, there is a Postgraduate Diploma in Special Educational Needs for which a Bachelor of Arts in Education is required that is 1.5 years. There are shorter options for those who have extent work experience as a teacher, for professionals to become a teacher in a vocation, those with a teacher education from another country and for those with an academic education in a subject (The Swedish Council for Higher Education, 2022b).

Perceptions of autism

Perceptions of autism can be considered negative in the general public (Huws & Jones, 2010; Wood & Freeth, 2016), in media (Jones & Harwood, 2009; Pesonen et al., 2021), and in education (Humphrey & Lewis, 2008). Media can play a key role in shaping the public perceptions, which can either facilitate or hinder the acceptance of autism in the society, potentially affecting also how people on the autism spectrum perceive themselves (Pesonen et al., 2021; Wood & Freeth, 2016). It can therefore be surmised that pupils on the autism spectrum can have a negative self- image of themselves and view their difference in a negative light (Humphrey & Lewis, 2008). Others' negative perceptions can also turn into negative actions. For instance, pupils on the autism spectrum can and do experience difficulties with peers and teachers, including bullying (Humphrey & Lewis, 2008; Maiano et al., 2016). Studies have shown that stereotyped perceptions of autism do not accurately characterise autism, and often particularly lack in positive aspects (Wood & Freeth, 2016). In the context of education, it is therefore crucial to understand how teachers and student teachers perceive autism and pupils on the autism spectrum, given that they are in the position to have an influence on how neurotypical pupils will learn to perceive autism and how pupils on the autism spectrum perceive themselves. Indeed, much prior work on attitudes to autism has looked at negative attitudes, prejudice and discrimination (Chung *et al.*, 2015; de Boer et al., 2010; Donohue & Bornman, 2015). Also, further research has shown that teachers who have prior experience and more expertise in working with pupils on the autism spectrum tend to report more positive attitudes (Karal & Riccomini, 2016; Gregor & Campbell, 2001). Indeed, teachers need to believe in inclusive education if pupils are to reach their potential at school (Woodcock & Nicoll, 2022, p. 765). Also, according to researchers (Skafle, Nordahl-Hansen & Öien, 2020) it is essential for teachers to focus on pupils' strengths and assets in order to provide support instead of focusing on problems and difficulties. Equally, research findings indicate that student teachers need to have positive experiences of working with pupils on the autism spectrum during their practice placements so that they can

develop social representations relating to learning and the environment (e.g. how the noise or smell of a classroom can influence the ability of pupils on the autism spectrum to focus) rather than being focused on the individual behaviours of pupils (Linton et al., 2015).

Research Aims

This paper examines student teachers' perceptions of people on the autism spectrum based on a survey taken from a larger transdisciplinary research study (██████████). The broader intention is to provide teacher educators with further evidence about student teachers' positive perceptions of people on the autism spectrum, enabling them to better prepare student teachers to teach pupils on the autism spectrum successfully in an inclusive classroom. This is considered a novel aim as previous research studies lack in positive aspects of people's perceptions of autism (Wood & Freeth, 2016). Findings reported in this paper also aim to identify whether differences exist in student teachers' perceptions towards autism across three universities located in three different contexts: England, Finland and Sweden.

Methods

The data presented in this article was collected in 2016 using a survey (██████████). This paper reports on findings from the responses' participants (n= 704) submitted describing their perceptions of the characteristics and social ability of people on the autism spectrum by using 3 words.

Participants

Data was collected from one university in three European countries which provided initial teacher education programmes. All participants were studying a teacher education programme at their university (e.g. some were studying primary teacher education and others secondary teacher education). The sample comprised a total of 704 student teachers, with 262 studying in England, 251 in Finland and 191 in Sweden, 191. The age of the participants ranged from 19 to 55 (M= 25.40, SD=6.41). The sample comprised 579 females, 120 males and 5 did not state their gender. There were 1,937 single word responses out of a possibility of 2,112 with 755 different words used in total (England, 228; Finland, 223; Sweden, 304).

Design and Survey Procedure

All student teachers participating in this study completed a survey which utilised a cross-sectional design about their perceptions and experiences of people (including pupils) on the autism spectrum. This study design enabled the research team to collect responses from all participants from one university at the same point in time, without the need to manipulate variables (Allen, 2017; Setia, 2016). The survey included a question "When thinking of people with autism, what are the first three words that come to mind?". The participants also had the option to explain their choices. The three-word questions focused on for this paper was designed to elicit participants' explicit perceptions of people (including pupils) on the autism spectrum and was adapted from similar free response methodologies (e.g., Nario-Redmond, 2010). The survey included a measure to compare the similarity of attitudes that participants held toward people with autism and pupils with autism specifically. Analysis of this measure suggested that the attitudes participants hold to people with autism were similar to those they hold toward pupils with autism specifically (see [REDACTED]).

The survey was piloted with 21 student teachers in England, 54 in Finland and 48 in Sweden to ensure comprehensibility and ease of use. Additionally, a list of steps was constructed in English, and then translated into Swedish and Finnish, to ensure consistency of administration processes (e.g., information sheets, consent forms, survey, debriefing sheets). Researchers provided an information briefing session immediately prior to handing out printed copies of the survey to those present in the classroom. Student teachers who chose not to participate were free to leave the session.

3 word trait analysis process

Analysis was carried out using a multi-layered, deductive co-rated coding process to ensure adequate inter-rater reliability as shown in Table 1.

INSERT TABLE 1 HERE

The content analysis procedure was designed and actioned by the researchers from each of the three countries as recommended by Silverman (2011) and Merriam (2009) without the assistance of a software programme. This felt crucial as a robust means to avoid language translation errors and misinterpretations. At each point of the five-stage analysis process the researcher(s) from each country first individually extracted, analysed and collated their country's data into the previously agreed format (see Table 1). Analysis results were then shared between the

researchers to enable debate and further analysis before all the data was emailed to the English researcher who was leading the process, before further discussion about word placement / inclusion took place between all of the research team. Disagreements were resolved via discussion.

Whilst all the words given in the survey for this question were included in the deductive coding process through to Stage four, Stage five focused specifically on the words used to describe the positive characteristics and social abilities of people /pupils on the autism spectrum (see Table 1). This decision was made as participants had identified the highest number of words by far in this theme. Out of a total of 1560 words at Stage 3, 661 described characteristics and social abilities of people / pupils on the autism spectrum. It is this final Stage five which is reported on in detail in the Findings and Discussion sections of this paper.

Stages one to four

All words submitted in the data were copied from the survey by the home country's researcher(s), colour coded and number of word repeats noted (example sample, Appendix 1). Following dual researcher checking, translation (from Finnish and Swedish into English) and discussion the lists of words were sent by email to the English researcher for 3-country collation and initial sorting into 19 possible codes.³

Continued consideration of the Stage one data sets was carried out via researcher discussion. This enabled the further merging of codes (Stage two). Exploring suitable and novel qualitative analysis presentation approaches (Camic, 2021) led to the construction of a visualisation tree (Appendix 2) clarifying the process being undertaken. Using the numerical data from the participants 3-word trait question answers it was possible to identify key areas (see Table 2). Through this analysis process it became possible to prioritise the areas of greatest relevance to the student teachers.

INSERT TABLE 2 HERE

Stage three focused on the further deduction of codes into themes, including the removal of duplicated words until only four main themes remained (n=1560). Due to the size of the data presented from each of the four areas identified it was decided to focus on the branch of the visualisation tree which held the student teachers' highest

³ Codes identified were: Student teachers' perceptions about how others see people on the AS; student teachers' perceptions of personality characteristics of people with autism; other cognitive abilities; high ability in specific areas / subjects; high ability; disability / SEN; school environments; interventions; support/ needs; impact on practice; teacher mindset; sensory needs; inclusion; exclusion; physical behaviour/needs; emotional behavioural needs; medical diagnosis; communication needs and differences; general communication.

response (see Appendix 2) and would be a key Stage four finding. This was the social abilities and characteristics theme (Stage 4). However, this does not mean that the other themes identified at this stage are not important or relevant requiring further exploration. At Stage five of the deductive coding process, negative and undetermined words were removed from the social abilities and characteristics theme so that focus on positive perceptions was achieved (n= 327). Following this action common sub-themes were explored. This resulted in the identification of 4 sub-themes.⁴

Results

An initial overview of the quantitative findings, indicate that approximately half of the student teachers from England (52.29%) and Sweden (55.68%) have used positive language of people on the autism spectrum through their selection of words, with Finland recording 39.23% (see Table 2).

The analysis of the findings show that Swedish student teachers (see Table 3) used the greatest variation of words when writing about how they perceive the social abilities and characteristics of people on the autism spectrum. They particularly perceive people on the autism spectrum as having special interests and hobbies, being unique, happy and being special in a positive way. Special interests and hobbies within the positive learning factor sub-theme recorded particularly highly, followed by positive personality traits (see Table 4).

INSERT TABLE 3 HERE

INSERT TABLE 4 HERE

The study also wanted to find any clear sub-theme national differences and similarities in the positive words sample. Table 5 illustrates the findings when the four highest words⁵ student teachers chose from each of the countries were extracted.

INSERT TABLE 5 HERE

The English participants noted unique, individual, interesting and intriguing, particular and creative as most relevant for their perception of people on the autism spectrum. Three of these words fell within the sub-

⁴ 4 sub-themes: 'positive social skills,' 'learning factors,' 'positive personality characteristics' and 'emotions.'

⁵ Five highest words were included for England as 'creative' and 'particular' received the same number of mentions.

theme of positive personality traits, one in positive social skills and one in the sub-theme of positive learning factors.

Finnish student teachers' four highest number of positive perceptions of people on the autism spectrum was different again and only drew from two of the sub-themes, positive learning factors and positive personality traits, with three out of the four from the former sub-theme.

Interestingly it was only the Swedish participants' who included words from all 4 of the sub-themes. They were also the only participants who had one of their four highest positive perceptions within the sub theme of emotions.

Discussion

This study examined student teachers' positive perceptions of the social abilities and characteristics of people on the autism spectrum. The results of this study indicate that the student teachers' perceptions of people, including pupils, on the autism spectrum differ in the three countries. Our findings highlight that greater than 50% of the student teachers in England and Sweden focused on positive words and still a sizeable number in Finland (circa 40%). Most studies have focused on the content of negative words, but we wanted to do a deeper dive in the content of the positive perceptions and see what they mean for the development of educational and social inclusion and inclusive practice in each of the three countries. This is interesting because many previous studies have focused on negative perceptions (Chung et al., 2015; Humphrey & Lewis, 2008; de Boer et al, 2010; Donohue & Bornman, 2015).

When critically evaluating the responses from the Swedish participants it becomes very clear that only a third of their total word choices within the sub-theme 'positive learning factors' refer to pupils' learning within the classroom and curriculum. Significantly two-thirds of the participants chose 'special interests / hobbies' as a positive learning factor, which is interesting as it suggests that these hobbies or interests are activities, they participate in outside of the school day. Findings also show the Swedish participants see people on the autism spectrum as being happy, shy, different, unique and special (positively) with 'unique' and 'special' being the second and third most popular chosen words, both of which are within the positive personality trait sub-theme. With few specific and consistent references to positive learning factors and a definite focus on people on the autism spectrum as 'special' these findings support the conclusions of Bölte, et. al. (2021) study which found educational staff were only sparsely able to provide inclusive education for pupils with neurodevelopmental

disorders. It is important to acknowledge however that since 2016 when the data for this research was collected the Swedish government has introduced mandatory learning objectives on neurodevelopmental disorders in all teacher education programmes from the fall semester of 2021 (Swedish Government, 2020) in an attempt to fill the knowledge gap in educational practice.

The findings from English student teachers did not replicate those of Swedish participants in general. The use of the word ‘special’ appears to have been avoided (see Table 3) by participants, and it can be hypothesised that this was because it can be considered demeaning, reinforcing perceptions of innocence. Instead, they clearly acknowledged the individuality of all people on the autism spectrum with the highest choice of words being ‘unique,’ ‘individual,’ and interesting / intriguing. In fact, the English positive personality trait sub-theme had the highest number of words from any sub-theme or country. Whilst there were words referring to positive learning factors and social skills the personality trait sub-theme dominated the English participants’ discourse. Interestingly, these findings appear to mirror directly national expectations as dictated by government and local policies and the purpose of schooling and teachers professional standing within society.

In comparison to findings from the English and Swedish participants, the Finnish student teachers’ top three chosen words, ‘meticulous,’ ‘focused,’ and ‘special interests / hobbies’ all fell within the positive learning factors’ sub-theme, with ‘special’ in the positive personality trait sub-theme scoring the highest overall. Their lowest number of selected vocabulary were in the positive social skills and emotions sub-themes. This appears to indicate that the Finnish student teachers’ main concern when considering the positives of teaching pupils on the autism spectrum remains focused on learning, with participants using the words ‘focused’ and ‘meticulous’ more frequently than participants from either of the other countries. Individual participants did identify positive personality traits, social skills, and emotion sub-themes with ‘thoughtful’ (5- positive personality traits sub-theme) being the word most used, followed by ‘honest / open’ and ‘sensitive’ (4 each – from social skills sub-theme). Again, such findings appear to be in unison with the Finnish national policy and social view of teachers and the value placed on school education and teaching.

It is interesting to consider the words chosen by student teachers in each of the three countries regarding the positive personality / characteristics of people on the autism spectrum and the countries’ social and political status of teachers, school education and inclusion.

Literature presented earlier clearly shows that Finnish teachers are highly valued and require postgraduate qualification from specialist training schools before being able to teach. Teachers are seen as high-status

professionals, economically worth investing in and crucial for developing the knowledge and skills of the next generation. In complete contrast, in England teachers are not generally valued and are frequently viewed by the populous and government as there to teach pupils social and emotional developmental skills and provide childcare, as well as equipping the next generation with the skills they need to gain future employment, providing economic security to the nation. Teaching as a profession is given limited recognition or regard with programmes as short as one academic year (PGCE) to gain qualified teaching status (QTS) by the government. It may be argued that the new two years induction for early career teachers (ECT) which should commence as soon as possible after gaining QTS, tries to ensure professional development is woven into the initial education for teachers. However, it appears that its impact could be limited as “there is no legal requirement to satisfactorily complete an induction period if an ECT intends to work solely in the independent sector, an academy (i.e. not state run), a free school, a BSO, an independent nursery school or an FE institution” (DfE, 2021, p.9, 1.10). As 75% of secondary schools and 32% of primary schools (these figures exclude all special schools and pupil referral units) alone were an academy as of January 2019 this does not evidence a national policy which is seeking equity or ensuring inclusion is in practice in all schools and by all teachers.

Teachers in Sweden also have low status with high acceptance rates to teacher education programmes. In 2018, the Swedish Public Service Television, SVT, reported that several political parties wanted to raise admission requirements to teacher education programmes because the requirements were low and universities were reporting that students were having difficulties following the programmes (Olofsson, 2018). Furthermore, individuals with a diagnosis on the autism spectrum have the right to services according to LSS and many pupils with autism will have LSS services. The National Board of Health and Welfare (2022) has conducted an investigation into the possibility of developing a national competence center for knowledge about intellectual disability and autism and conclude that they are advising the Swedish government to do so. This idea came after a report by the Swedish National Board of Health and Welfare (2021) that concluded the need to strengthen the competence within special living facilities for individuals who get support in accordance with the LSS law (SFS, 1993). Such a center could be an important partner for teacher education providers.

What all of this suggests is that at the time of the data collection over 50% of the student teachers surveyed who were completing a university-based teacher education programme in England and Sweden had begun to develop positive perceptions of the characteristics and social skills of pupils on the autism spectrum. This might indicate that they perceive the characteristics and social skills of pupils on the autism spectrum’s as positive, but importantly this does not appear to have influenced their perceptions of pupils on the autism spectrum as learners.

In contrast, the data reveals that Finnish student teachers focused on the characteristics of pupils on the autism spectrum as learners primarily with limited vocabulary shared about their perceptions of pupils' positive social skills, emotions or personality traits. Thus, although the Finnish student teachers indicate that they see pupils on the autism spectrum as 'special' this is predominantly only related to education inclusion and not broader social inclusion.

Findings from this research significantly reflect the value and place of inclusion and inclusive practice in each nation, with national policy and societal views also influencing the status of teaching as a profession, their perceptions of neurodiverse pupils and the continue replication of stereotypical viewpoints. It is clear that with only between 39% - 55% of participants reporting positive words there is still quite a lot of work required to support teachers to have positive attitudes. Also, the countries' long-term views and plans for the academic and economic wealth, and well-being of its population clearly influences the maintenance of a teaching workforce that is allowed to embrace inclusion, inclusive practice and academic excellence for all.

Limitations

It is acknowledged that the data was collected in only one university and one cohort per country and thus generalizability is limited. Also, the data was gathered prior to the global pandemic and so does not capture any recent changes to student teachers' perceptions of people on the autism spectrum due to this event.

Conclusion

This study's novel contribution is that it compares the language used by student teachers in three countries to describe the positive characteristics and social skills of people (including pupils) on the autism spectrum, and also their ability and perceptions towards the adaptation of pedagogical practice to facilitate inclusive education. The 3 word qualitative methodological approach undertaken in this study has allowed for a rich and granular understanding of the positive characteristics of pupils on the autism spectrum (Skafle et al, 2020). It highlighted how student teachers' perceptions are influenced by the value and quality of their initial teacher education programmes, and by their nation's policies of inclusion and the professional status teachers have within society. This study has also shown how teachers are often required to manage conflict between embedding inclusive practice and achieving the economic, academic standards and political aims of governments.

Compliance with ethical standards

Informed, written consent was obtained from all student teachers and was also carried out in accordance with regard to confidentiality and voluntary participation. Participants could withdraw at any time. All data will always be stored safely until the conclusion of the project and in line with the archiving laws of each nation. Professional guidelines and ethical codes of conduct for each nation involved applied (Swedish HSFR Codex, British BPS, BERA, 2011/2018, 'Ethical Guidelines for Educational Research,' Guidelines of the Finnish Advisory Board on Research Integrity, 2012) and were adhered to.

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Declaration of completing interest

None of the authors have any conflicts of interest.

Credit authorship contribution statement

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Appendix 1: Student teachers' perceptions of social abilities and characteristics (Stage 2)

Student teachers' perceptions of personality characteristics of people on the AS.	Student teachers' perceptions about how others might interpret people on the AS
SOCIAL/CONTACT DIFFICULTIES/A-UNSOCIAL <i>Sociala/ kontakt svårigheter / a/osocial</i> 29 Social issues 1 Social difficulties 4 epäsosiaalisuus 8 vuorovaikutusongelmat / sosiaaliset haasteet 24 tilannetajun vaikeus 1	NOT UNDERSTOOD/MISUNDERSTOOD/MISINTERPRETED/LACK OF INFORMATION <i>Oförstådd/ Missförstådd/ tolkad</i> 4 Misunderstood 2 Misinterpreted 10 väärinymmärretty 1 tietämättömyys / tuntematon 2
DIFFICULTY UNDERSTANDING OTHER PEOPLE <i>Svårt förstå andra människor</i> 1	PERSPECTIVE SOCIALLY <i>Own perspective 1</i> <i>omat ajatukset / eri ajatus</i> 2
SOCIAL LIMITATIONS <i>Social begränsad</i> 1	FUNNY <i>Funny in a good way</i> 1
DIFFICULTY WITH RELATIONSHIPS <i>Svårt med relationer</i> 2 Forming Social Relationships 1 Relationships 4 Unable to form relationships 1	ANTI-SOCIAL <i>Anti-social</i> 2 <i>Poor social interaction</i> 1
SOCIAL INTERPLAY/INTERACTION <i>Social samspel/ Interaction/samvaro</i> 3 Social /skills, difficulties/relationships/ Interaction/ 41 sosiaaliset taidot / sosiaalinen vuorovaikutus 8	RUDE <i>Rude</i> 1
DIFFICULTY IN READING FEELINGS <i>Svårt läsa av känslor</i> 4 <i>vaikea ymmärtää / osoittaa tunteita</i> 3	SOLITARY <i>Solitary</i> 1 <i>yksinäinen / yksinäinen toiminta</i> 7
SOCIAL COMPETENCE/LACK OF <i>Social kompetens/ brist på</i> 4	BULLIED <i>kiusattu</i> 1

Key: Blue – English; Green – Finnish; Orange – Swedish

Appendix 2 - Tree Visualisation

