

ORIGINAL ARTICLE

Systematic review on flexi-schooling of autistic students

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Abstract

Flexi-schooling, an approach involving at least some instruction both at home and at school, has potential to adapt education to meet the needs of autistic students while also providing in-person school benefits. This systematic international literature review of flexi-schooling for autistic students aims to understand the advantages and disadvantages of this practice, why flexi-schooling is chosen and the factors for a successful implementation. Eight hundred and fifty-five studies were screened, of which eight met the search criteria and were analysed using thematic analysis. Flexi-schooling is seen as a way to provide autistic students with an education that is constructed to meet individual needs and is flexible enough to address changes. Nevertheless, it can also be a challenging process that requires commitment, trust and additional effort from parents and teachers and may face various barriers. Flexi-schooling can be difficult to implement due to power imbalances between school and home and a lack of communication and cooperation. Flexi-schooling is an idea that has not yet been widely implemented in practice, and there is little information available about how it is put into action. Although it is rarely a first choice, it is often considered as a positive solution to a challenging and constantly changing situation.

KEYWORDS

autistic students, flexi-schooling, homeschooling, inclusive education

Key Points

- Flexi-schooling is often the last chance for autistic students to avoid being excluded from school or to remain mentally healthy.
- Although home or flexi-schooling of autistic students often initially arises from a school emergency situation, many families report being able to combine 'the best of both worlds' (school attendance and homeschooling) with this model.
- Flexi-schooling requires cooperation on equal terms from both the school and the family and, furthermore, resources in terms of time, money, emotional investment, educational interest and abilities.
- Further research into the actual implementation of flexi-schooling and the required conditions is necessary in order to be able to consider flexi-schooling as a further schooling option for autistic and non-autistic students.

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INTRODUCTION

In July 2021 the British Broadcasting Corporation (BBC) stated that the number of home-schooled students in the UK has been rising by 75% since the beginning of the Covid-19 pandemic (Hattenstone & Lawrie, 2021). It seems that the pandemic has intensified a trend towards more home education that has been going on for decades in some regions of the world (Arora, 2006; Hurlbutt, 2011; Lawrence, 2017; Parsons & Lewis, 2010; Schafer & Khan, 2017; Smith et al., 2020). This is not a contemporary pandemic-related phenomenon, but a development that seems to continue: media reports from the UK and the US confirm post-pandemic high levels of home education which exceed the pre-pandemic numbers (Hattenstone, 2024; Jamison et al., 2023).

The parents' perception that the needs of their children with special needs or autism, in particular, are not met at school, seem to be one of the reasons why families decide to withdraw their children from school and to educate them at home (Badman, 2009; Department for Education, 2019; Kendall & Taylor, 2014). In a recent study Gillie (2023) depicts how families of autistic and non-autistic children come to the decision to withdraw their children from school, even though they originally expected them to follow a mainstream school career. Parents report that their children encountered unfavourable situations at school: special educational needs remained unmet, bullying, severe anxieties, school refusal and school exclusion. This was followed by a phase when parents reached out to the school to solve these issues. When meetings were cancelled or ended conflictual and parents perceived the school as not understanding, homeschooling was seen as the only solution. Studies among parents of autistic students, furthermore, show that many of these students are often temporarily excluded from school, in some cases for a few hours, in others up to years (Brede et al., 2017; Grummt et al., 2021; Guldberg et al., 2021; Lilley, 2015; Neilson & Bond, 2024; O'Hagan et al., 2021; Sproston et al., 2017).

The Covid-19 pandemic forced schools world-wide to close for certain periods of time and to relocate education from school to home. This situation was the motivation for this literature review. The pandemic has forced education systems, that are based on school attendance, to work in a different way. While there seemed to be a common agreement in media and society that the return to classroom education should be enabled as soon as possible, some students, among them autistic students, seem to have benefited from learning at home (Bozkus-Genc & Sani-Bozkurt, 2022; Dobosz et al., 2023; Eckert & Kamm Jehli, 2021; Greenway & Eaton-Thomas, 2020; Hornstra et al., 2022). It seems worth looking at the opportunities that learning at home has created for some students and how these could be used for a more flexible education provision.

Autism Spectrum and school education

Autism is characterized by differences in communication and social interaction patterns as well as intense focus on specific interests, that may result in different learning strategies and behaviours. The autism spectrum is large and its manifestations individually very different (Happé & Frith, 2020). While some autistic students may not need additional support at school, others may develop their own learning strategies, which are difficult to understand for others. They may feel overwhelmed by sensory stimuli and have difficulties to establish and/or to maintain positive social relationships with their peers (Lilley, 2015). At school these differences may cause difficulties, such as when teachers and other school staff do not feel prepared to cater to the particular needs of their autistic students (Hurlbutt, 2011; Kendall & Taylor, 2014).

Studies on inclusive education present mixed results in regard to autistic students: inclusive settings can be 'both social benefit and risk' (Kasari et al., 2011, p. 533). Specific social benefits are the opportunities to achieve a certain social status in the group and to form reciprocal friendships. Specific risks are that the majority of autistic children in inclusive settings, nevertheless, report difficulties with peers, seem to be less able to form reciprocal friendships and are often observed unengaged in play situations (Kasari et al., 2011). While some studies show that parents of autistic children are more satisfied with education in special provision units than in mainstream classrooms (Anderson, 2020), others claim inclusive settings as an adequate and opportunity-providing space (Falkmer et al., 2015; Lindsay et al., 2016). Parents of autistic students express concern 'that mainstream schools lack the specialisation to meet the needs of children with autism, but that special schools lack the provision to meet the needs of children who are academically able' (Lawrence, 2017, p. 172).

This situation leads in some cases to autistic students changing school at a higher rate than non-autistic students for various reasons: lack of support and teacher understanding, negative communication, bullying, children's decreasing well-being, inadequate behaviour management and lack of home-school-communication (Grummt et al., 2021; Lilley, 2015; Mitchelson et al., 2021). Similar reasons are named for the partial or complete exclusion of autistic students from school (Guldberg et al., 2021; Lawrence, 2017; Neilson & Bond, 2024) or why parents decide to withdraw their students from school and to home-school them instead (Badman, 2009; Kendall & Taylor, 2014; O'Hagan et al., 2021). Lawrence (2017, p. 2) describes this situation as 'unlawful shared education through informal exclusion'.

Autism spectrum and home education

In the UK the Office of National Statistics estimates that '1.1% of the UK population have engaged in home education at least part of the time and 2% did so on a full-time basis'; 23% of these families homeschool children with special educational needs (Greenway & Eaton-Thomas, 2020, p. 512). In the US Schafer and Khan (2017) state that in 2012 4% of the population were either home-schooled or participated in flexi-schooling, thus attended school part-time and was homeschooled additionally. Similar to the UK the number of students with special needs was higher in homeschooling and flexi-schooling families than in students enrolled in schools.

Homeschooling is a so called 'elective choice' in the UK. Several scholars point out that this official term seems inadequate since homeschooling their autistic children was not a voluntary choice for most families, but the only option they saw (Hurlbutt, 2011; Kendall & Taylor, 2014; Parsons & Lewis, 2010; Smith et al., 2020). Smith et al. (2020, p. 14) stated that 'dissatisfaction with school' was the main reason for families to opt for homeschooling indicating that most students have been attending school for a certain time before being withdrawn. This distinguishes these families from those who homeschool their children due to ideology- or faith-based reasons.

In the UK homeschooling families are not necessarily registered or monitored depending on their location (Smith et al., 2020). They may or may not follow the national curriculum. The teaching is provided by the parents or external tutors; therefore, schools are not necessarily involved. In the United States, legal requirements and curriculum control for homeschooling vary by state (Kaya, 2015). While some states offer parents very broad freedoms with respect to approval and accountability, others emphasize stricter regulation of homeschooling. In Australia, the legal basis for homeschooling also varies across states (Jackson, 2020). Homeschooling is allowed in all states, but government registration and approval is required. Although the government supports a broad range of teaching styles and methods, there are curriculum requirements outlined in the Australian Curriculum (Australian Curriculum, Assessment and Reporting Authority [ACARA], 2022; Halsey et al., 2010).

Studies on homeschooling families with autistic students show that the decision to opt for home education is often the result of a long observation and discussion process between the parents and their child/ren. Often a 'crisis point' (McDonald & Lopes, 2014, p. 9) was the trigger for the decision (Arora, 2006; McDonald & Lopes, 2014; Parsons & Lewis, 2010). Crisis points were reduced well-being of the children (including panic attacks, sleeping issues and suicidal thoughts), constant dissatisfaction with the school or regular school exclusion (McDonald & Lopes, 2014; Smith et al., 2020). Although reluctant at first, many families seem to get used to the new situation and are satisfied with

their teaching, the children's progress and the flexibility (Hurlbutt, 2011; O'Hagan et al., 2021; Parsons & Lewis, 2010; Smith et al., 2020). However, parents also report the burden of a huge responsibility, financial cutbacks and impact on family and couple life (Lawrence, 2017; McDonald & Lopes, 2014).

These negative aspects are also reported by families who did not choose homeschooling for their autistic children, but were forced to home-educate during the lockdowns in the Covid-19-pandemic (Bozkus-Genc & Sani-Bozkurt, 2022; Dobosz et al., 2023; Eckert & Kamm Jehli, 2021; Greenway & Eaton-Thomas, 2020). These families did not feel prepared, lacked material as well as teaching skills and felt stressed to organize their jobs and the homeschooling of their children from one day to the other. However, some stated that their children benefitted from the homeschooling experience as they progressed academically and seemed less stressed (Eckert & Kamm Jehli, 2021; Greenway & Eaton-Thomas, 2020).

Flexi-schooling

In the United States, more students are flexi-schooled than homeschooled (Schafer & Khan, 2017). Flexi-schooling or shared education can be understood as an educational third way, neither full-time homeschooling, nor full-time school attendance. In this article, we follow the rather broad definition of Schafer and Khan (2017) and understand flexi-schooling as 'an approach involving at least some instruction both at home and at school' (p. 525). This approach seems to have special potential for autistic students: It enables an education meeting the needs of autistic students through individual-tailored learning settings at home while keeping regular contact and interaction with peers and education professionals at school.

A systematic international literature review of flexi-schooling for autistic students was conducted to answer the following research questions: (1) How is flexi-schooling organized in different countries?, (2) What are the enabling or hindering factors to establish flexi-schooling? and (3) Which conditions are necessary to establish flexi-schooling as a regular education option for autistic students or other students with or without special needs? To our knowledge, no prior systematic review on flexi-schooling or partial homeschooling has been conducted.

METHODS

This literature review aims to illustrate the current research situation on flexi-schooling of autistic students. Due to the Covid-19-pandemic concepts like home education and flexi-schooling have received more scientific attention and may impact education systems in the future. The PRISMA guidelines informed the data

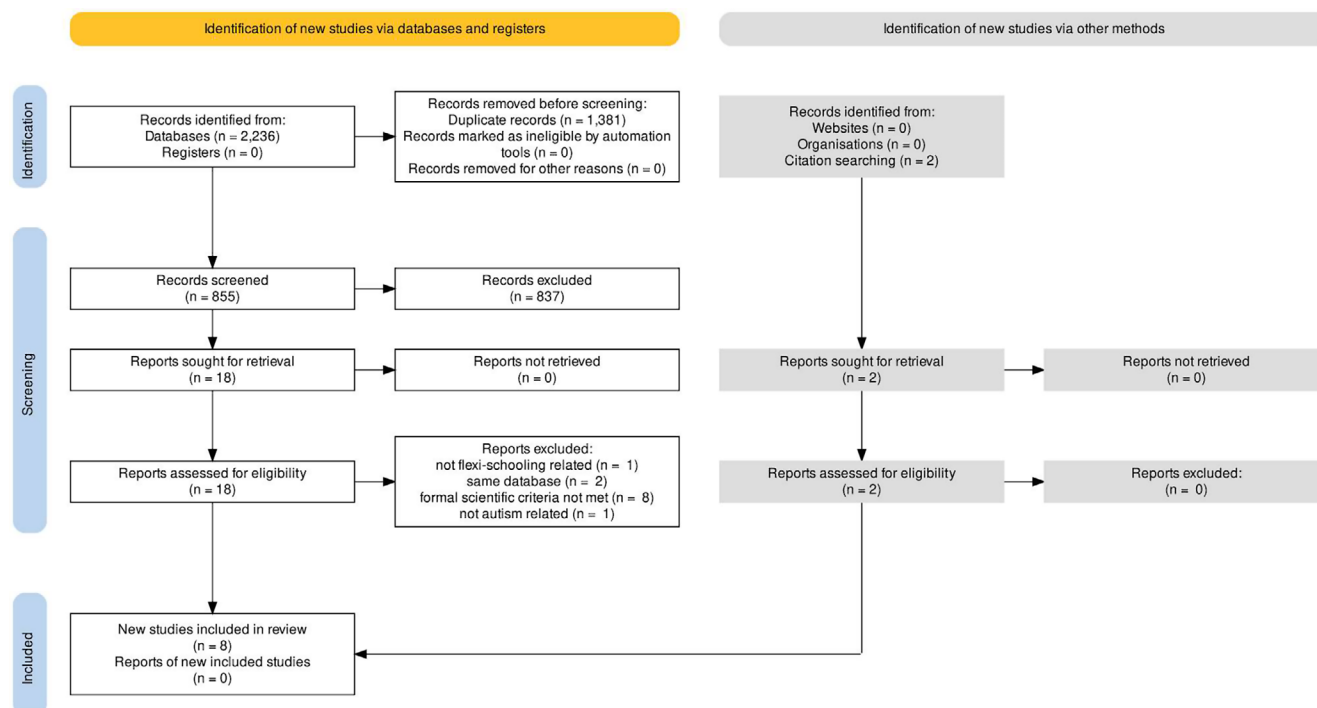


FIGURE 1 PRISMA flow chart.

collection and analysis process and, therefore, ensure transparency regarding the research process.

Data collection

Studies had to fulfil the following criteria in order to be part of the literature corpus: The studies had to be about autistic students, that is, either the students themselves had to be part of the study sample or other participants who define themselves through them, such as parents or teachers of autistic children. Studies with/about students with other special needs (e.g., intellectual disabilities) were only included if they also discussed autistic students particularly. Since flexi-schooling does involve the school, studies on homeschooling were considered, but only when the involvement of a school was mentioned and commented on. Studies on pure homeschooling were excluded.

The starting date for the search was set to 1994, which is the date of the introduction of the DSM-IV that presents diagnostic criteria for autism that are outdated today, but still used and reflected in scientific literature. The search for literature was concluded in July 2021 to cover the situation until the Covid-19-pandemic. Homeschooling during the pandemic was organized very differently in different countries. As many countries were confronted with homeschooling requirements, there may well be long-term changes in approaches and concepts that cannot yet be estimated at the time of the review.

Several databases were used for searching studies following the criteria mentioned above (ERIC, Elsevier, pedocs, Cairns), but only Google Scholar and ERIC

TABLE 1 Used search terms using PICO.

Concepts	Search terms
Population (P)	Aut* OR ASD OR ASC
Interest (I)	Flexi-schooling OR flexi OR shared education
Context (Co)	Homeschooling OR home-schooling OR home schooling OR home education

provided relevant results. All relevant studies published on ResearchGate and Elsevier were also accessible via Google Scholar, thus, we could reduce the number of databases to Google Scholar and ERIC. Electronic hand searches of relevant journals did not produce new results.

A first screening of the titles and abstracts in English, French and German was conducted. While a large number of studies were found in English, it was difficult to find any suitable studies in French and German. There is no German or French term expressing 'flexi-schooling', which makes it difficult to conduct an identical search in all three languages. Instead, different synonyms for homeschooling were used in German and French, but without any relevant results. A first search produced over 29,000 search results, many of which had nothing to do with the topic. As a result, the search string was refined further until the number of viable studies was reduced to 855 (cf. Figure 1).

The search terms are presented using the PICO schema proposed by Stern et al. (2014) for qualitative reviews (cf. Table 1):

During the screening, the exclusion criteria were concretized. All prima facie relevant studies were examined for inclusion and exclusion criteria and their fit in the

review was discussed with the research group. The remaining articles were screened full-text for inclusion, and read carefully by at least one researcher who compared them to the eligibility criteria. Studies that did not meet all criteria but seemed interesting for the review were discussed with the research group. In case of disagreement, consensus on inclusion or exclusion was reached by discussion and unanimous decision-making. Finally, eight studies met the inclusion criteria (cf. Figure 1).

There were different conceptualizations of flexi-schooling presented in the chosen studies. Some studies did not mention flexi-schooling explicitly, but described concepts that can be understood as flexi-schooling according to our broad definition. These were included. Other studies were excluded for the following reasons: they did not mention home- or flexi-schooling explicitly, had no relation to autistic students or did not provide empirical data. Some authors published more than one article based on the same dataset. In this case, the most relevant article for the review was chosen.

Data analysis

To analyse all studies from the sample, thematic analysis (Braun et al., 2019) was used as tool to provide a deep description of the data set. All selected studies were read and coded carefully by at least one researcher. A deductive coding process using the research questions as starting point for coding has been planned with the following starting codes: organization of flexi-schooling, enabling factors for flexi-schooling, barriers to flexi-schooling, conditions for flexi-schooling. The deductively generated codes were collected in a shared document in order to

compare and discuss them. In these discussions, some of the deductively generated codes seemed imprecise, for example, factors for flexi-schooling could be factors speaking in favour of homeschooling or school attendance, but were not specific for flexi-schooling. Furthermore, it became apparent that the selected studies provide information about topics that were not reflected in the research questions, but may be relevant to answer them such as pros and cons for both homeschooling and school attendance. That is why an inductive coding round was added to take into account aspects that were not thought of before. In a next step, broad themes were derived from the data available: benefits and obstacles of school attendance, benefits and obstacles of homeschooling and organization of flexi-schooling. These could then be subdivided into subthemes (cf. Figure 2). As can be seen in the graphic, flexi-schooling results from mutually exclusive factors that are attributed to either the homeschooling setting or school attendance. Homeschooling and school attendance can be understood as antagonists whose compatibility lies in flexi-schooling.

RESULTS

Eight studies were selected that fulfilled the inclusion criteria. Most studies were qualitative small-scale studies on homeschooling with 5 to 20 parent participants who are home- or flexi-schooling their children (Hurlbutt, 2011; Kendall & Taylor, 2014; Lawrence, 2017; McDonald & Lopes, 2014; Parsons & Lewis, 2010). Research instruments were questionnaires including open questions (5 studies), interviews (6 studies), focus groups (1 study), participant observation (1 study) or a mixture of qualitative instruments (4 studies). In several cases parents

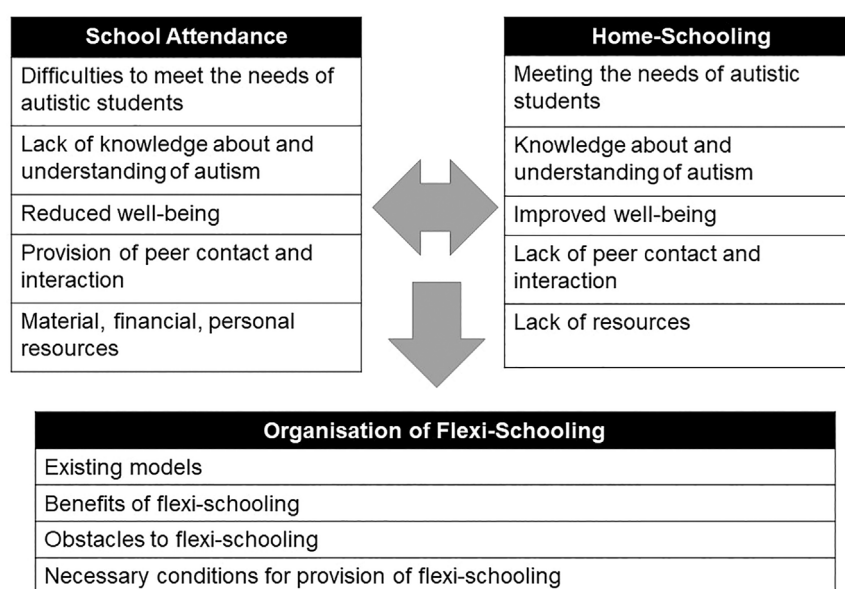


FIGURE 2 Identified themes and subthemes.

were interviewed in order to identify reasons why they decided to homeschool their children with special needs (Hurlbutt, 2011; Kendall & Taylor, 2014; Lawrence, 2018; Smith et al., 2020). These studies reflect about 50 autistic students in total. Not all studies specify the number of autistic students in the sample, thus it remains an estimation.

Parents, mostly mothers, were the main informants in the selected studies, but teachers and school staff were also considered sometimes (Hurlbutt, 2012; Smith et al., 2020). The studies are from the UK (five studies), the United States (two studies) and Australia (one study), where homeschooling is a regular option for schooling. They were published between 2006 and 2020. The main characteristics of each selected study are presented in Table 2.

In the following, the findings of the literature review are presented in a structured manner based on the three main themes (cf. Figure 2): benefits and obstacles of school attendance, benefits and obstacles of homeschooling and organization of flexi-schooling. During the analysis it became clear that those are very closely intertwined and analysing them separately would produce redundancy.

Findings

In general, the selected studies see flexi-schooling as a constructive compromise between regular schooling and homeschooling. This compromise aims to benefit from the advantages of each type of schooling by mutually outweighing the disadvantages. This indicates that homeschooling is not seen as a solution, when parents or students are dissatisfied with school. The same is true for flexi-schooling: It is only partly a decision against school and it is not a convinced decision for homeschooling either. Therefore, it is necessary to draw attention to both settings regarding their suitability for autistic students and their families.

Flexi-schooling as compromise between school attendance and homeschooling

Several studies point out that parents do not favour home education over the school system, but feel forced by unfavourable circumstances to withdraw their children from regular or special schools (Kendall & Taylor, 2014; Lawrence, 2017; Parsons & Lewis, 2010; Smith et al., 2020). These conditions are named as push factors for homeschooling and are presented in detail in the following.

Meeting the needs of autistic students

Autistic students are considered to be a vulnerable group (Hurlbutt, 2012) that may struggle in a regular

schooling situation. Whereas only few teachers see school as a potentially difficult place for autistic students (Hurlbutt, 2012), the parents in the selected studies have the impression that schools are not prepared to meet the needs of autistic students and, therefore, are inappropriate environments for their children (Arora, 2006; Lawrence, 2017; Parsons & Lewis, 2010).

‘The parents in this study felt that there was a lack of understanding about ASD by the staff and an unwillingness to listen to the parents when they wished to provide information on the best way to support and work with their child’ (Kendall & Taylor, 2014, p. 8). They see the school system as inflexible and rigid, which results in focus on testing and assessments (Smith et al., 2020), whereas the specific interests or passions that many autistic individuals have cannot unfold (Hurlbutt, 2012; Lawrence, 2017). This lack of individualized attention and support is a factor that parents are missing in school attendance and find in home- or flexi-schooling (Lawrence, 2017; McDonald & Lopes, 2014).

A flexible approach to individual learning needs is a key benefit of homeschooling (Smith et al., 2020), which is also mentioned by the families supported by SIDE, the Schools of Isolated and Distance Education in Western Australia (McDonald & Lopes, 2014). SIDE were established more than a century ago in order to provide school education for children in isolated areas. Without intent, these schools were rapidly attended by students with special needs, students living overseas and Indigenous children. SIDE use diverse strategies to be in contact with their students and are working very individualized. Therefore, they provide a lot of aspects that the parents in the selected studies wished for. Positive factors of home- or flexi-schooling mentioned by the parents are their children's academic progress and high achievements. Furthermore, parents perceive the school work at home as more efficient leaving more time and space for special interests and daily living skills (Arora, 2006; Hurlbutt, 2011, 2012; Lawrence, 2017; Smith et al., 2020).

Knowledge about and understanding of autism

Parents in the selected studies report that their children's teachers were often unprepared for autistic students which in itself is not necessarily a problem according to their experiences. However, parents also report that some teachers relied heavily on teaching assistants and therefore, handed over the responsibility for the autistic student to potentially less qualified staff (Hurlbutt, 2011; Kendall & Taylor, 2014). Interestingly, with regard to homeschooling, where most parents are not qualified as teachers either, this concern is not raised (Lawrence, 2017).

Some studies mention positive examples of motivated, interested and dedicated school staff making efforts to create a suitable learning environment for their autistic students (Kendall & Taylor, 2014; McDonald & Lopes, 2014). Parents expected at least a basic knowledge

TABLE 2 Presentation of selected studies.

Authors, year	Region	Objective	Sample	Setting	Research method	Main findings
Arora (2006)	UK	<ul style="list-style-type: none"> Reasons for home education Needs for support Special focus on SEN 	Questionnaire: 65 families Interviews: 12 families with 17 children aged 6–17	Homeschooling	Questionnaire, interviews	<ul style="list-style-type: none"> Difficult periods at school and massive unhappiness of children leads to home education Need for flexible education settings Need for support of parents providing home education
Hurlbutt (2011)	USA	<ul style="list-style-type: none"> Identifying reasons for homeschooling Gathering experiences of homeschooling parents 	10 parents of 9 families with in total 13 autistic children	Homeschooling of autistic students	Interviews	<ul style="list-style-type: none"> Parents have found treatment plan for their children, that schools cannot or do not want to provide Homeschooling parents have broad knowledge about ASD Homeschooling in the interest of their child Teaching and treatment is diverse, unique and individualized Homeschooling as major decision that should be supported by both parents
Hurlbutt (2012)	USA	<ul style="list-style-type: none"> Understanding special needs educators' perceptions on home-schooled autistic students 	52 special needs educators	Homeschooling of autistic students	Questionnaire with open-ended questions	<ul style="list-style-type: none"> Teachers doubt parents' teaching competencies Teachers are concerned that homeschooled students lack social and academic opportunities Controversy whether schools should serve as resource for homeschooling families
Kendall and Taylor (2014)	UK	<ul style="list-style-type: none"> Improve understanding of reasons why parents of children with special educational needs decide to home-school 	7 mothers with children aged 6 to 14	Homeschooling	Semi-structured interviews	<ul style="list-style-type: none"> Homeschooling is often no voluntary choice Formal schooling seems not to cater the needs of autistic students School staff needs basic knowledge on autism Need for more flexible provision
Lawrence (2017)	UK	<ul style="list-style-type: none"> Perceptions of parents' lived experience with flexi-schooling Investigating whether flexi-schooling benefits autistic children 	5 families with children aged 7 to 14	Flexi-schooling	Semi-structured interviews, questionnaire	<ul style="list-style-type: none"> Failure by the school to understand children's individual needs, school as inappropriate environment for autistic children Partial or complete homeschooling increases children's well-being Flexi-schooling needs constant communication between school and home Flexi-schooling improves communication between child and family Flexi-schooling parents are in a vulnerable legal position
McDonald and Lopes (2014)	Australia	<ul style="list-style-type: none"> Investigating homeschooling of autistic students Special focus on cooperation with Schools of Isolated and Distance Education (SIDE) 	7 parents from 6 families with autistic children aged 4–14	Homeschooling of autistic students in cooperation with SIDE	Semi-structured interviews, participant observation, informal interviews and documentary data source	<ul style="list-style-type: none"> School staff needs basic knowledge on autism Need for greater emotional, social, financial support and respite for parents who homeschool their children Full range of educational options should be available SIDE provided individualized programs that led to academic progress and social interaction

TABLE 2 (Continued)

Authors, year	Region	Objective	Sample	Setting	Research method	Main findings
Parsons and Lewis (2010)	UK	<ul style="list-style-type: none"> Explore parents' experiences who home-education children with special educational needs 	11 parents of students with special educational needs aged 5 to 16 (48% ASD)	Homeschooling of students with special educational needs	Questionnaire	<ul style="list-style-type: none"> Homeschooling is often no voluntary choice Need for flexible support through 'mix of school and home-based provision' Relationship between families and local authorities should be strengthened Autistic children more likely to be withdrawn from school
Smith et al. (2020)	UK	<ul style="list-style-type: none"> Explore the reasons why people home educate in Hertfordshire 	77 home educators, 6 local authority representatives		Literature review, focus groups, interviews and questionnaires	<ul style="list-style-type: none"> Legal situation regarding homeschooling depends on location Multitude of reasons for homeschooling Dissatisfaction with school Concern about well-being of children with SEN Pressure to withdraw children from school Homeschooling is not always a positive choice Flexibility as key benefit

on autism and an understanding for their children's behaviours or learning strategies (Kendall & Taylor, 2014).

Students' well-being

Several studies point out that some autistic students experienced a worrisome decrease in their well-being when attending school regularly. Stress, anxiety and unhappiness are the most often mentioned conditions that led parents to the decision to withdraw their children from school (Kendall & Taylor, 2014; Lawrence, 2017; Smith et al., 2020). In few cases, severe health issues such as extreme weight loss or suicidal thoughts were extreme phenomena related to school attendance (Lawrence, 2017; Smith et al., 2020). Bullying or exclusion experiences were also motives for homeschooling (Arora, 2006; Hurlbutt, 2012; Smith et al., 2020).

These negative experiences led to academic regression and challenging behaviours in some cases which was not understood by the staff. Children were punished in some cases, parents had to pick up their children often. This situation was then solved by withdrawing the children from school partially or completely in order to protect them (Hurlbutt, 2012; Lawrence, 2017; Smith et al., 2020).

With homeschooling or flexi-schooling many of those issues could be overcome. Parents reported that their autistic children would spend less time in the afternoon with meltdowns and other behavioural challenges and that homeschooling led to a better mental state of their children (Lawrence, 2017). Two studies found that home education resulted in a learning atmosphere which increased self-confidence and reduced anxiety (Kendall & Taylor, 2014; Smith et al., 2020). Furthermore, the ability to spend more time with their autistic children and therefore bond more with them as well as getting a better understanding of the autism-spectrum was a great benefit from teaching at home. Therefore, not only the students but also the parents' well-being increased in some cases (Kendall & Taylor, 2014; Lawrence, 2017).

Social aspects

One concern that is mentioned by teachers in Hurlbutt (2012) is that homeschooled students miss out on social opportunities. Many homeschooling families underlined that they organize social activities for their children in order for them to socialize with peers. Many of the students in the selected studies attended sport clubs, creative activities, etc. and met other students their age—outside of the school setting (Smith et al., 2020). However, in the same study few parents expressed that they have difficulties to organize social interactions for their children.

Resources

While schools receive funding for every student attending school, there is no funding for homeschooling families in the selected studies (Arora, 2006; Hurlbutt, 2011; Smith et al., 2020). At the same time in most homeschooling

families one parent is teaching and therefore, gives up a job and an income. If parents hire a tutor to teach their child/ren at home, this is a major investment. The financial cutback can have severe consequences for the family (Arora, 2006; Hurlbutt, 2011; Kendall & Taylor, 2014; Smith et al., 2020).

Apart from financial issues, the personal sacrifices are also pointed out in the selected studies (Arora, 2006; Hurlbutt, 2011; Kendall & Taylor, 2014; Smith et al., 2020). Parents in Smith et al. (2020) had the impression to be viewed as bad parents and felt isolated. Especially when families felt forced to change to homeschooling the starting period is described as 'period of struggle, unhappiness, high tension and insecurity' (Arora, 2006, p. 62). Parents who are homeschooling have to be around all the time and have less time for themselves (Hurlbutt, 2011; Kendall & Taylor, 2014).

Homeschooling families are often organized in communities and exchange learning materials. However, they cannot keep up with the resources in terms of materials and support that schools have (Hurlbutt, 2011; Smith et al., 2020). This also refers to teaching skills that are available at school, but not necessarily at home (Hurlbutt, 2012; Smith et al., 2020). Although, there are parents who are professional teachers, many have at least a bachelor's degree, there are also low-income families and less qualified parents (Arora, 2006; Hurlbutt, 2012).

Rationale for flexi-schooling

The push factors discussed above for both settings (school and home) show that there is a variety of benefits and obstacles in each system. Flexi-schooling tries to overcome the obstacles of each system by employing the benefits of the other. Although a promising idea, the study selection shows that it often remains an idea. There are only few examples of existing settings of flexi-schooling that are described in the literature: 'A very small number of parents/careers reported that their child was able to attend school on a part-time basis' (Smith et al., 2020, p. 46). And even those do not come without obstacles.

Lawrence (2017) interprets flexi-schooling as enabling multiple bridges: between the child's needs and school provision, between the autistic child and its wider family, between parents and their child. Additionally, the parents are seen as a bridge between the family and external agencies.

Flexi-schooling in practice

Although Schafer and Khan (2017) state that in the USA the number of students who use flexi-schooling outnumbered those who are fully home educated and that 'there are any number of combinations of home and school programming available to children with ASD' (Hurlbutt, 2012, p. 7), there are surprisingly few detailed descriptions of how flexi-schooling was carried out in our reviewed studies.

McDonald and Lopes (2014) present two families whose autistic children were schooled at home and in Schools of Isolated and Distance Education (SIDE). Both students presented in the study were bullied at secondary school and homeschooling was a decision to protect them. Later they could enrol at SIDE, where one of the students attended a few lessons and the lunchbreak twice a week and the other also attended SIDE on a regular basis. Although SIDE do not necessarily provide flexi-schooling and should not be understood as flexi-schooling institutions in general, this school fits in the description of flexi-schooling for this literature review based on these two cases presented above.

The parents in Lawrence's (2017) study present very different shares between school and home education. One student attends school for 2 h a week and otherwise studies at home. Another attends school 4 days a week and is homeschooled for one. Two siblings are attending schools in the morning and an autism center led by their mother in the afternoon. This shows that various options are theoretically available to share education between home and school. More questionable is the case of a student who is homeschooled but attends speech therapy and a social skills group at school (Hurlbutt, 2011).

Benefits of flexi-schooling

Flexi-schooling aims to combine the advantages of school attendance and home education. Flexibility is the main characteristic of flexi-schooling and allows an adaptation to each student's individual learning needs (Lawrence, 2017; McDonald & Lopes, 2014; Parsons & Lewis, 2010; Smith et al., 2020).

This means 'accepting the student "as is"' (Lawrence, 2017, p. 183), learning at the student's pace (McDonald & Lopes, 2014), learning more efficiently, acknowledging time and space for special interests or functional skills and working adapted to sensory issues (Lawrence, 2017). This consideration of individual needs increases the children's well-being and enables them to attend a school setting that is less adapted for some time, where they experience peer interaction and a regular academic content. It may also prevent complete school exclusion (Lawrence, 2017).

Flexi-schooling acknowledges the parents' knowledge about their child's autism (Hurlbutt, 2012) and at the same time 'lighten[s] the load of the person-in-charge of the home-schooling programme' (McDonald & Lopes, 2014). Another advantage that Arora (2006) mentions is that a student enrolled in school means allowances for the school which can use this money to support the student. If students are purely home-educated, there is no funding for teacher salaries, materials, textbooks etc. available.

Obstacles to flexi-schooling

The organization of flexi-schooling seems to be the main obstacle for transferring the idea into practice.

Flexi-schooling is not an institutionalized option for schooling. Although it is theoretically possible in some countries, there is no right to flexi-schooling. This means the decision whether a child's education can be shared depends on the willingness of the school to cooperate with homeschooling parents (Kendall & Taylor, 2014; Lawrence, 2017; Smith et al., 2020), but this is not always the case (Hurlbutt, 2011; Smith et al., 2020).

Examples from the reviewed studies show how different schools initiate or react to flexi-schooling and how this impacts the parents' perceptions. Lawrence (2017) presented one case, where a mother was forced to homeschool her child for most of the time due to behaviour issues that the school did not feel capable to deal with. This mother experienced her son's homeschooling as burden placed on her and hoped that he may attend school more regular in the future. In another case a mother would have liked to homeschool her son more than only 1 day a week, but expected the school to refuse this request. These examples point out, that flexi-schooling initiated by the school may lead to a more negative perception as 'burden' on the family's situation than when the family itself makes the decision as 'protection'.

Consequently, the successful establishment of flexi-schooling is highly dependent on the conviction and strength of parents (Lawrence, 2017). Some parents make a deliberate choice not to homeschool but to flexi-school because they hope that 'school could be "better"' (Lawrence, 2017, p. 184). They are convinced that it is the mix of homeschooling and school attendance that is best for the child. Since the legal foundations have yet to be established in most countries, it takes a lot of perseverance on the part of parents to push through such a schooling setting.

The study on teachers by Hurlbutt (2012) indicates that teachers were concerned regarding the children's estimated lack of social and academic opportunities in a homeschooling setting due to their parents' missing educational qualification. They focused on the advantages of learning in a public school and criticized the lack of material at home, but did not take into consideration neither the advantages of learning at home nor the disadvantages of learning in school. They 'show a lack of confidence in parent's ability' (Hurlbutt, 2012, p. 6), which makes a trustful cooperation between school and home difficult.

Necessary conditions for a satisfying provision of flexi-schooling

Flexi-schooling is often a response to negative school experiences. Lawrence (2017) and Arora (2006) articulate that flexi-schooling is meeting a need. Since all the studies point out that many parents perceive the homeschooling of their autistic children not as a choice, but as the only option left, one can assume that they are interested in keeping contact to the school and sharing the responsibility for education. All selected

studies argue for more flexible approaches and provide ideas how this could be put in practice and which basic conditions are necessary in order to do so.

In several studies parents and scholars claim that each student should have the full range of educational options including flexi-schooling (McDonald & Lopes, 2014; Parsons & Lewis, 2010; Smith et al., 2020). Students' needs may change over time and finding the right balance of homeschooling and school attendance is an ongoing process (McDonald & Lopes, 2014; Parsons & Lewis, 2010; Smith et al., 2020). In contrast to homeschooling parents the flexi-schooling parents in Lawrence (2017) show a higher level of insecurity, since their educational situation is not legally ensured, but always depends on the willingness of the school.

Many parents wish for more support from the school system concerning their home education including access to funding, resources and professionals with teaching skills (Arora, 2006; Hurlbutt, 2012; Lawrence, 2017; McDonald & Lopes, 2014). But since there is no institution that regulates or monitors those who home educate, there is also no structure which can provide necessary support. If the school does not fully meet the child's needs, Arora (2006) suggests, they may be met when local authorities and schools would work with families and a 'flexible education plan' (p. 63). She believes schools 'retain some responsibility to provide advice, resources and regular monitoring of these children 'as part of a' well-coordinated arrangement in which children remain on the roll of the school, even if they are partly or wholly educated at home' (p. 63).

In general, both parents and teachers were in favour of monitoring home- and flexi-schooling families. This monitoring would be a responsibility of the local education authorities who could coordinate the students' education between home and school (Arora, 2006; Hurlbutt, 2012; McDonald & Lopes, 2014; Parsons & Lewis, 2010). For the teachers in Hurlbutt (2012), guidelines that clarify the responsibilities of teachers, parents or other involved actors would be necessary in order to establish a cooperation between school and home-educating families: 'Schools or state education agencies, and parents alike need to understand their roles and responsibilities, and accountability measures need to be documented and followed consistently' (p. 7). Apart from guidelines, mutual respect and trust have to be ensured between the partners (Arora, 2006; Lawrence, 2017; Parsons & Lewis, 2010; Smith et al., 2020).

DISCUSSION

Eight studies that mention or describe situations of flexi-schooling of autistic students were analysed in order to identify models of flexi-schooling as well as advantages and disadvantages of flexi-schooling. The results show a complex picture of decision-making considerations made

in the interest of the autistic children, but often also due to pressure from the school or difficult school situations. Although rarely a choice, flexi-schooling is presented as positive solution to a difficult and constantly changing situation: 'The parents in this study see shared education as more than just "not full-time school" or "not full-time home". They see it as a way of facilitating communication and consistency across the different elements of their child's life' (Lawrence, 2017, p. 226).

The overarching question if flexi-schooling should be one education option among others is answered positively in the selected studies. Although not a choice in the first place, many families report very promising experiences with the new situation. However, the way to get there seems to be a rocky road providing the involved actors with a number of obstacles.

Organization of flexi-schooling

While flexi-schooling seems to meet a need, there are only few examples on how it is put in practice. The studies reviewed suggest that there are major differences, especially in the details. As stated above, it is important to realize that family, school, teachers and classmates form an interconnected system, that balances time, location, staff and the relation between home and school. In addition, in many cases not only the home and school are involved, but also external institutions or organizations such as support institutions or autism centers.

The time spent at school can vary greatly and lead to different ratios in the course of a school career. While some schools only provide spaces for social contact, others offer spaces for educational differentiation and autistic requirements. In terms of staff, it must be noted that, although, students may be home-schooled most of the week, they continue to need individual support at school. From an organizational perspective, it needs to be clarified how to track or document the extent to which the curriculum is being successfully followed using the agreed-upon or self-selected materials.

Gutherson and Mountford-Lees (2011) present the case of a small rural school that is at risk to not have enough students. The school offered full-time-schooling, flexi-schooling (children attend school on agreed days) and the regular visit of a 'learning hub' providing materials and activities from and for homeschooling families regardless of a special need.

This example shows that providing a flexible curriculum, establishing contact to homeschooling families, ensuring the education of full-time students, discussing funding issues etc. requires convinced and committed school staff. Agreements between parents and school are used to formalize the schooling mode for each child, which reduces the flexibility to some extent. Furthermore, the families had to be registered with the local authorities which is not necessarily the

case for pure homeschooling. Although, the school had hoped to attract more students for full-time school attendance by providing flexi-schooling options, many homeschooling families preferred the regular learning hub visits.

The question how flexi-schooling is organized cannot be answered based on the existing literature. The few documented cases are individual cases of a single family and a single school. There are very different models and options, but these are negotiated individually. According to our analyses, flexi-schooling does not seem to be something that schools are thinking about as an alternative to standard schooling.

Enabling and hindering factors to establish flexi-schooling

Whereas autism is usually associated with the need of structure, routines and inflexibility, the main benefit of flexi-schooling is the large flexibility that neither school nor home education can provide. At first glance this might seem paradoxical, but flexibility was understood by the participants as the 'opportunity for their children to access learning that is constructed to meet their individual needs: what, when and how they learned' (Smith et al., 2020, p. 39).

The review shows that most parents appreciate schools, teachers and their work, but feel that this is not enough to provide their autistic children with an adequate learning situation. Lawrence (2012) underlines that it is important to show schools the parents' appreciation and at the same time to underline the parents' contribution when engaging in flexi-schooling in order to establish a partnership concerning the child's education. One could argue that flexi-schooling requires flexibility not only in terms of schooling but also on the part of parents and the school.

In most of the cases documented and analysed in the studies, there was a perceived necessity to change an educational situation due to bullying, overwork, or not fitting in. It is the parents who step up and try to establish an appropriate educational experience at home while trying not to deprive their children of the social experiences at school. Thus, it is their concern for their children's well-being, educational success, and social experiences that they are trying to address through a construct like flexi-schooling.

Lawrence (2017) reports that the mothers interviewed in her study have a great deal of knowledge about autism—she estimates that some have autism knowledge that exceeds that of many education professionals, which is consistent with Hurlbutt (2011) and Kendall and Taylor (2014). Nevertheless, Kendall and Taylor (2014) describe tensions between parents and school staff provoked through insensitive and deficit-oriented communication as well as a lack of cooperation. Despite the presumed benefits, flexi-schooling still faces numerous legal, attitudinal and financial barriers.

Arora (2006), p. 63) addresses potential problems between school and home: 'There can also be a big power differential between the family and the school, which could make it difficult for the family to feel sufficiently confident to enter into such an arrangement, unless the school makes them feel that they are valued as educators of their child, too.' This shows, on the one hand, that many schools apparently do not yet succeed in achieving this balance—which is actually something to be strived for as a matter of course for all students—and, on the other hand, that parents see themselves in a position of having to act as an advocate for their children.

In contrast to students who are educated exclusively by homeschooling, flexi-schooling offers the advantage that the contact, the responsibilities and the relationship to the regular school continue to exist. Above all, the responsibility for the students is a shared one, between parents and teachers (Kendall & Taylor, 2014; Lawrence, 2017). Although no such case was described explicitly in the selected studies, flexi-schooling could also be a possible form of schooling that parents choose—similar to what often happens in the area of homeschooling (Kaya, 2015)—because they believe they can ensure a higher quality education for their children than the school system alone can (Smith et al., 2020).

For some students the school is a stressor, while home provides a safe space, that protects from the variety of challenging aspects in mainstream schools (Neilson & Bond, 2024). While some homeschooling parents try to provide their children with compensation for social contact through leisure activities, not all can do so (Smith et al., 2020). Flexi-schooling exposes students to these challenges as well, but at a lower level.

Another important issue is the financing question of flexi-schooling, which is located within the regular school system and does not rest solely on the shoulders of parents. All studies prove that sacrifices, such as quitting a job and losing one income, are made by the parents in order to provide homeschooling. It could be argued that a solution like flexi-schooling may allow for part-time employment, while many homeschooling parents no longer have time for a job.

Although flexi-schooling can be established in very different ways, it usually contains a major part of home education conducted by parents or privately financed tutors without monitoring from school or authorities. Therefore, it can be highly doubted that these models of flexi-schooling would be accepted as legal accommodation for autistic students in countries that have obligatory school attendance.

Conditions to establish flexi-schooling

The presented studies may explain why flexi-schooling is often more an idea than an actual option in schools. Autistic students, their families and teachers meet the

same difficulties as presented in the selected studies: parents are unsatisfied with their children's school, teachers feel unprepared to teach autistic students and students are excluded from school due to behavioural issues or a lack of teaching assistants (Grummt et al., 2021). Therefore, it is necessary to find solutions in order to guarantee an inclusive education within the school setting. Establishing flexi-schooling demands for commitment at the school level, but also parents' trust, flexible and inclusive educational programs, the regulation of funding and a legal framework, thus, far-reaching changes to the existing system at various levels.

The study by Hurlbutt (2012) focusing on the collaboration between teachers and parents underlines the concern of both teachers and parents for the well-being of autistic children. School attendance and homeschooling address different spheres of well-being and flexi-schooling aims to bring those together. If this focus is clear, constructive and respectful cooperation is the logical consequence (Lawrence, 2012).

Since flexi-schooling was found in the studies to be a solution that was preceded by a high level of discomfort—and thus probably also a wide variety of problems with the hometown school—the cooperative relationship is undermined from the outset. Constructive and respectful communication and cooperation can presumably only develop if these problems are accepted as a thing of the past and cooperation is raised to a more professional level. A requirement for this process is the mutual acknowledgement of parents and teachers as equally invested educational partners, which is not always the case as Arora (2006) and Hurlbutt (2012) show.

Even when flexi-schooling is established, all involved parties need to be open for changes and flexible modifications—flexi-schooling will remain a process. Since the students' well-being and learning progress is in center, supports or measures may become redundant or additionally necessary (Lawrence, 2012). Continuous flexibility is considered the key to address the individual child's needs best, but it also demands a lot of commitment, tolerance, potential financial pressures and additional work from teachers and parents.

It remains to be discussed whether an educational setting such as flexi-schooling can be more appropriate to the needs of autistic students than standard education. The students' needs for structure, order, social contact and learning paths can vary greatly. In some documented cases (Lawrence, 2017; McDonald & Lopes, 2014; Parsons & Lewis, 2010; Smith et al., 2020), flexi-schooling combines the benefits of both school attendance and homeschooling, if oriented primarily around the individual learning needs of the student.

Consequently, depending on the student, an individual solution must be sought for the distribution of homeschooling phases and attendance phases that can meet individual needs, such as the prevention of sensory

overload. While many countries have a legal basis for homeschooling, there is none for flexi-schooling.

For schools and education authorities to accept and support flexi-schooling as an alternative, future research would need to clarify, how to document learning progress, how to ensure that the curriculum is followed, how to address funding issues and what a recommended ratio of attendance to homeschooling should be, taking into account the principle of flexibility.

LIMITATIONS

Only eight studies were found that fulfil all selection criteria. Only two of them have flexi-schooling in their main focus, whereas the rest only mentions it as an additional option. All studies have small samples that are self-selected and therefore not representative as underlined by the respective authors (cf. Kendall & Taylor, 2014; Smith et al., 2020). What seems to be representative is the disproportionate number of autistic students being home- or flexi-schooled. This is pointed out in general studies on homeschooling (Badman, 2009) and is reflected in the more specific studies focusing on students with special needs or autistic students, in particular (cf. Kendall & Taylor, 2014; Parsons & Lewis, 2010).

This indicates either that flexi-schooling is not a widely established procedure for autistic students or that it remains an under-researched phenomenon, although the Covid-19 pandemic with its implications for distance learning has made flexible approaches to school more visible.

Students who benefit from flexi-schooling are not registered as flexi-schoolers, but rather as regular students, thus, access to the field remains very limited. Public channels such as social media are likely to attract primarily those parents and students who are convinced of the idea.

Although Schafer and Khan (2017) state that there are many students who benefit from flexi-schooling, this is not reflected by research. Lawrence (2012) and Gutherson and Mountford-Lees (2011) provide the only detailed descriptions to be found in the scientific literature of how the establishment of flexi-schooling could work.

In many countries, homeschooling is a well-established and widely accepted practice, which has allowed it to gain wide acceptance and followers and to develop steadily. If flexi-schooling were a serious option, it would have to be examined whether it could follow a similar trajectory.

IMPLICATIONS FOR PRACTICE, POLICY AND FUTURE RESEARCH

According to Smith et al. (2020), flexi-schooling would not be necessary if schools were more flexible and adapted to the needs of autistic students. Goodall (2015)

presents perspectives for autism-friendly schools and the first perspective does include flexibility. Although the author does not refer to flexi-schooling but discusses regular and special educational provision within schools, he argues that some students 'may require the option of a wider range of educational provision' (p. 323).

This review shows that flexi-schooling can be an interesting form of provision for some autistic students and their families and teachers. But it should also be remembered that the documented cases of flexi-schooling in the reviewed studies often arose out of necessity and a school situation that could not be sustained due to distress. Furthermore, flexi-schooling as described in the selected study is only an option for families who have the resources in terms of time, money, emotional investment, educational interest and abilities.

Although this review has focused on autistic students, it is evident that flexi-schooling is not limited to this group of students. Other vulnerable students struggle with full-time school attendance as well, for example, students with anxiety, chronic disease or students who move often. It is open to what extent flexi-schooling can develop towards a serious alternative and be an option for these groups of students.

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CONFLICT OF INTEREST STATEMENT

There are no conflicts of interest.

DATA AVAILABILITY STATEMENT

No new data was generated, therefore, data sharing is not applicable.

ETHICS STATEMENT

Ethics approval was not required. According to several studies, the autistic community prefers identity-first language, we followed this recommendation.

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