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Insights into Special Educational Needs

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Editorial Introduction

Welcome to the second edition of this *Educational Research Quarterly*. Following our first volume on curriculum, we have in this edition cast a light on Special Educational Needs (SEN).

In February the Department of Education published a new SEN Reform Agenda and Delivery Plan, followed in June by an Outcomes Framework. The reform agenda sets out a five-year plan focused on ensuring children receive the *right support, from the right people, at the right time, in the right place* through earlier intervention, clearer processes, better workforce training, improved collaboration across services and more sustainable use of resources. The overall goal is to create a more inclusive, responsive and child-centred system where children with SEN have equitable access to education and improved long-term outcomes. This development makes it timely to look at some research on SEN.

In the first article, Professor Mel Ainscow, a world-renowned expert on inclusion, lays out what his decades of research and experience suggest is necessary to make inclusion work. Then, Alison Mackenzie and Erin Dawson present the perspectives of pupils themselves on inclusion, drawing on research on children on the Autism spectrum. In the third article I have looked at some of the data showing large differences in the number of pupils with SEN support in different countries, the rise in numbers and what that means. And finally, John Anderson, Don Passey and Samuel Taggart look at how we can use generative AI to help meet pupil needs.

I hope you enjoy these diverse perspectives and find ideas to inspire your practice. Please do get in touch with any questions or ideas for future issues.

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Developing Inclusive Schools

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Throughout the world children enter schools from different backgrounds, have different experiences and leave with very different results. In many countries the poorest children tend to lose out most starkly, achieve the worst results and attend the lowest performing schools. And, of course, learners with disabilities are particularly vulnerable to marginalisation.

There are, however, countries that have made progress in addressing this challenge whilst at the same time having high overall standards. The implication is that it *is* possible for countries to develop education systems that are both inclusive and excellent.

This paper summarises what research has to say about this agenda, drawing in particular on evidence generated through a programme of studies I have carried out with my colleagues over the last 25 years in the United Kingdom and internationally.

Defining the agenda

My experience of improvement initiatives suggests that clarity regarding purpose is crucial. In particular, it is helpful to use a definition of inclusive education that involves the following elements:

> ***Inclusion is a process.*** That is to say, inclusion has to be seen as a never-ending search to find better ways of responding to diversity. It is about learning how to live with differences and how to learn from differences. In this way diversity comes to be seen more positively as a stimulus for fostering learning, amongst children and adults.
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> ***Inclusion is concerned with the identification and removal of barriers.*** Here barriers may take different forms, some of which are to do with existing policies, the way schools are organised, relationships and the forms of teaching provided. Consequently, it is necessary to collect, collate and evaluate evidence about these factors to plan for improvements in policy and practice.
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> ***Inclusion is about the presence, participation and achievement of all students.*** Here 'presence' is concerned with where children are educated and how reliably and punctually they attend; 'participation' relates to the quality of

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their experiences whilst they are there and, therefore, must incorporate the views of the learners themselves; and 'achievement' is about the outcomes of learning across the curriculum, not merely test or examination results.

Inclusion requires a particular emphasis on those groups of learners who may be at risk of marginalisation, exclusion or underachievement. This indicates the moral responsibility to ensure that those groups that are statistically most at risk are carefully monitored, and that, where necessary, steps are taken to ensure their presence, participation and achievement within schools. At the same time, it is necessary to be vigilant in watching out for learners who may be overlooked.

We have found that a well-orchestrated debate about these elements within schools can lead to a better understanding of the principle of inclusion.

Moving knowledge around

In trying to develop inclusive schools it is helpful to use an *'ecology of equity'*. This addresses three interlinked sets of factors that impact on the progress of pupils. These relate to *within-school factors* to do with existing policies and practices; *between-school factors* that arise from the characteristics of local school systems; and *beyond-school factors*, including the demographics, economics, cultures and histories of local areas. Focusing on these factors can create the conditions for 'moving knowledge around'.

Within-school factors: Our research suggests that 'schools know more than they use'. This means that the starting point for strengthening the work of a school is with the sharing of existing practices through collaboration amongst staff, leading to experimentation with new ways of working.

The use of evidence to study teaching within a school can help to foster the development of practices that are more effective in reaching hard to reach learners. This can create space for rethinking. Particularly effective techniques in this respect involve the use of mutual lesson observation, sometimes through video recordings and evidence collected from pupils about teaching and learning arrangements within a school.

Under certain conditions, such approaches provide 'interruptions' that help to make the familiar unfamiliar in ways that stimulate self-questioning, creativity and action. In so doing they can lead to a reframing of perceived problems that, in turn, draws attention to overlooked possibilities for addressing barriers to participation and learning.

Between-school factors: Moving beyond what happens within individual schools, our research suggests that collaboration between differently performing schools can reduce polarisation within education systems, to the particular benefit of learners who are performing relatively poorly. It does this by both transferring existing knowledge and, more importantly, generating context specific new knowledge.

In terms of schools working in highly disadvantaged contexts, school-to-school partnerships can be a powerful means of fostering improvements. Most notably, we have seen how they led to striking improvements in the performance of some schools facing the most challenging circumstances. Significantly, we found that such collaborative arrangements can have a positive impact on the learning of pupils in all of the participating schools.

Beyond-school factors: Our research also leads me to conclude that closing the gap in outcomes between those from more and less advantaged backgrounds will only happen when what happens to children outside as well as inside schools change. This means changing how families and communities work and enriching what they offer to children. In this respect we have seen encouraging examples of what can happen when what schools do is aligned in a coherent strategy with the efforts of other local players – employers, community groups, universities and public services.

Reforming education systems

These ideas call for coordinated and sustained efforts within schools and across education systems, recognising that improving outcomes for vulnerable learners is unlikely to be achieved unless there are changes in the attitudes, beliefs and actions of adults. All of this echoes the views of Michael Fullan, an internationally recognised expert on educational change, who argues: '*If you want system change you have to change the system!'*

It is also important to understand that policy is made at all levels of an education system, particularly at the classroom level. Indeed, as far as pupils are concerned, teachers are policy makers. The implication is that attempts to bring about system change must involve them. Their thinking and actions are what matter most as far as inclusion is concerned.

With this agenda in mind, I suggest six key strategies that can be used to guide system reform efforts. These are:

1: Inclusion should be seen as a principle. This should influence all educational policies, particularly those that are concerned with the curriculum, assessment processes, teacher education, accountability and funding. All of this should be guided by the UNESCO mantra: *Every learner matters and matters equally.*

2: Barriers to the presence, participation and achievement of learners should be identified and addressed. Progress requires a move away from explanations of educational failure that focus on the characteristics of individual children and their families, towards an analysis of contextual barriers experienced by learners within schools. In this way, those pupils who do not respond to existing arrangements come to be regarded as 'hidden voices' who, under certain conditions, can encourage improvements.

3: Schools should become learning communities where the development of all members is encouraged and supported. Reforming education systems in relation to inclusion requires coordinated and sustained efforts within schools. Therefore, the starting point must be with practitioners: enlarging their capacity to imagine what might be achieved and increasing their sense of accountability for bringing this about. Teacher professional development, stimulated by an engagement with evidence, is an essential factor in creating such self-improving schools. The role of school leaders is to create the organisational conditions where all of this can happen.

4: Partnerships between schools should be developed to provide mutual challenge and support. School-to-school collaboration can strengthen improvement processes by adding to the range of expertise made available. In particular, partnerships between schools have an enormous potential for fostering the capacity of education systems to respond to learner diversity.

5: Families and other community partners should be encouraged to support the work of schools. The development of education systems that are effective for all children will only happen when what happens outside as well as inside schools changes. Indeed, there is encouraging evidence of what can happen when what schools do is aligned in a coherent strategy with the efforts of other community players. This does not necessarily mean schools doing more, but it does imply partnerships beyond the school gate, where partners multiply the impacts of each other's efforts.

6: Locally coordinated support and challenge should be provided based on the principle of inclusion. This means that policy makers must recognise that the details of policy implementation are not amenable to central regulation. Rather, these should be dealt with by those who are close to and, therefore, in a better position to understand local contexts. Within these locally coordinated developments, the presence of experienced advisers who can support and challenge school-led improvement is crucial.

In making use of these six interconnected strategies, it is vital to take account of contextual factors, some of which may create particular obstacles to their implementation. At the same time, we have to learn from things that don't work out in the way we had intended.

Levers for change

Evidence is the lifeblood of inclusive educational development. Therefore, deciding what kinds of evidence to collect and how to use it requires considerable care, since, within schools, *what gets measured gets done*.

Education systems collect far more statistical data than ever before in order to determine effectiveness. This has led to new pressures, as policy makers have become preoccupied with measuring school outcomes in terms of narrowly defined test scores and comparing progress with that of other countries through systems such as Programme for International Student Assessment (PISA).

This trend is widely recognised as a double-edged sword precisely because it is such a potent lever for change. On the one hand, data are required in order to monitor the progress of children, evaluate the impact of interventions, review the effectiveness of policies and processes, plan new initiatives and so on. On the other hand, if effectiveness is evaluated on the basis of narrow, even inappropriate, performance indicators, then the impact can be deeply damaging. Whilst appearing to promote the causes of accountability and transparency, the use of data can, in practice: conceal more than they reveal; invite misinterpretation; and worst of all, have perverse effects on the behaviour of practitioners.

The challenge, therefore, is to harness the potential of evidence as a lever for change, whilst avoiding these potential problems. This means that the starting point for making decisions about the evidence to collect should be with an agreed definition of inclusion. In other words, we must *measure what we value*, rather than valuing what can more easily be measured. Therefore, evidence collected within schools needs to relate to the presence, participation and achievement of all students.

Implications

The ideas I have outlined in this paper require a move away from explanations of educational failure that concentrate on the characteristics of individual children, towards an analysis of contextual barriers to participation and learning experienced by pupils within schools. This thinking is guided by a belief that inclusion should *not* be seen as a separate policy. Rather, it should be viewed as a principle that informs all policies, particularly those that deal with the curriculum, assessment, school evaluation, teacher education and budgets. It must also inform all stages of education, from early years through to higher education. In this way inclusion is not seen as somebody's job. Rather, it is reform agenda that must be the shared responsibility of everyone involved in educating our children and young people.

Background reading

Ainscow, M. (2024) *Every learner matters and matters equally: Making education inclusive*. UNESCO (https://unesdoc.unesco.org/ark:/48223/pf0000388991 **)**

Ainscow, M. (2024) *Developing Inclusive Schools: Pathways to Success*. Routledge

(https://www.routledge.com/Developing-Inclusive-Schools-Pathways-to-Success/Ainscow/p/book/9781032571430)

Ainscow, M. (2025) *Reforming education systems for inclusion and equity*. Routledge (https://www.routledge.com/Reforming-Education-Systems-for-Inclusion-and-Equity/Ainscow/p/book/9781032818283)

Useful resources

'Promoting inclusion and equity in education: Lessons from international research'. A short talk by Mel Ainscow: https://youtu.be/9E9fawfkHWk

'The Index for Inclusion'. This review and development framework is used in many countries across the world to promote inclusion in schools:

https://www.eenet.org.uk/resources/docs/Index%20English.pdf

'Reaching Out to All Learners'. A resource pack of professional developed by the International Bureau of Education-UNESCO. Available free at:

https://www.ibe.unesco.org/en/node/103

'Time for an inclusive turn'. This blog considers developments in Portugal, one of the most inclusive education systems: https://internationalednews.com/2022/03/30/time-for-an-inclusive-turn-mel-ainscow-on-inclusion-as-a-guiding-principle-for-educational-reform-in-portugal/

'Reaching the Hard to Reach'. These professional development materials focus on teacher/student dialogue as a strategy for promoting inclusive classrooms: https://reachingthehardtoreach.eu/

Pupils' Perspectives on Inclusive Schools

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Introduction

In *The Reason I Jump*, 13-year-old Naoki Higashida, a non-speaking autistic boy, provides answers to 58 questions commonly asked about autistic behaviours. In response to the question, 'Do you prefer to be on your own?' he writes, 'We'd love to be with other people. However, because things never, ever go right, we end up getting used to being alone … Whenever I overhear some remark about how much I prefer being on my own, it makes me desperately lonely' (Higashida, 2013, p.47).

Using an alphabet grid and a computer with the support of his mother and teacher, we enter Naoki's inner world. He quickly discredits the prejudicial stereotype that autistic people do not want company or friends, that they lack empathy, sensitivity or imagination and that metaphor is beyond their understanding. He is all too aware that autistic people like him cause others distress, that he seems odd, like a person from 'outside the regime of civilisation' (p.153) and that the world of autism must seem like a 'mysterious place' (p.15). Before he could write, Naoki describes his life as 'being like a doll spending your whole life in isolation, without dreams and without hopes' (p.19). What kept him going was his belief that to live like a human being, nothing was more important than expressing himself and helping others become better friends to autistic individuals.

First-person accounts such as these also reveal how we can sympathetically include children with additional support needs in our schools. We know, however, that pupils with a SEN do not always have the same educational outcomes as their peers (DE, 2025), and that inclusion, though recognised as the most effective way to give all children the opportunity to flourish (UNICEF, 2017), is a contested concept and challenging to realise.

Definition of Inclusion: Convention on the Rights of Persons with Disabilities

As of 2023/24, one in five children (19.4%) and young people have a special educational need (SEN) and/or a disability in Northern Ireland (DE, 2025, p.9). Between 2004/05 and 2023/24, there was a 29% increase in pupils with a SEN and a 134% increase in pupils with a statement. SEN pupils also tend to present with more than one type of need. Cognition and Learning needs are the most common, representing approximately one-third (35%) of all identified needs, followed by social, behavioural, emotional and wellbeing needs (20%) (DE, 2025, p.10).

UNESCO (2005, p.12) describes inclusion in education as 'a dynamic approach of responding positively to pupil diversity and of seeing individual differences not as problems, but as opportunities for enriching learning'. Moreover, under international law,

persons with disabilities are recognised as rights holders entitled to education without discrimination. Recognition of inclusion is the key to achieving the right to education. It is enshrined in the *Convention on the Rights of Persons with Disabilities* (CRPD), the first legally binding instrument to contain a reference to the concept of quality inclusive education. General comment 4 of the CRPD (2016) defines the core features of inclusion as:

1. A '**whole systems approach'** in which all resources are directed toward advancing inclusive education and embedding the necessary cultural, policy and practice changes within institutions.
2. A '**whole educational environment'**. Strong, committed leadership is required to embed the culture, policies and practices necessary for inclusive education, and this must extend across all areas, including classroom teaching and relationships, teacher supervision, counselling services, medical care, interactions with learners' parents and engagement with the local community.
3. A '**whole person approach'** recognises the capacity of every pupil to learn and sets high expectations for all learners. Inclusive education emphasises support, reasonable accommodation and early intervention to enable all learners to reach their potential. Inclusive education entails responding to the individual needs of students rather than expecting them to adapt to the system.

Central to the concept of inclusion is ensuring that teachers receive the education and training they need within an inclusive culture that is supportive, collaborative, interactive and problem-solving. Respect for and value of diversity, in which all are equally welcome, irrespective of disability, race, colour, sex, language, linguistic culture, religion or any other status, is likewise critical. Inclusive schools implement policies to prevent abuse and bullying and create learning environments that are friendly and supportive, where everyone feels safe, supported, stimulated and encouraged to express themselves.

Research that speaks directly to pupils on the neurodivergent spectrum and those with moderate learning difficulties (MLD) has revealed the importance of these features. As we will discuss below, regardless of ability, disability or need, pupils want to be included, respected, valued and supported by the whole educational system.

Barriers to inclusion in mainstream schools

Post-primary sensory environments can present significant challenges for neurodivergent pupils, who need to navigate larger buildings, cope with being among many more young people and manage increased movement during the school day compared to primary school. School spaces, like nearly all mainstream public spaces, are designed for the sensory profiles of neurotypical individuals who can cope with fluorescent lighting, hard surfaces and constant movement (Birkett et al., 2022). Sensory differences are an invisible difference until the stimuli become so overwhelming that the autistic pupil has a 'meltdown' or responds in ways that can be perceived as aggressive. Autistic pupils process information differently from their neurotypical peers, which can include heightened sensitivity to light, touch, taste, noise (hyperacusis) and smell, for example, and they may be slower to integrate sensory information. Some autistic pupils

may struggle to distinguish speech from background noise due to heightened hearing. This is a form of sensory avoidance, whereby pupil seek to avoid painful sensory input. On the other hand, other pupils may be sensory seeking, whereby they look for extra or intense sensory input because it helps them feel regulated, focused or comfortable. These differences can significantly impact how pupils function in school, disrupting their academic performance and social relationships. While sensory differences are common among autistic individuals, these vary, of course, and it is essential to understand the specific sensitivity of each individual to promote sensory inclusion.

Mainstream environments can lead to sensory exclusion. One autistic pupil told Goodall (2018a, p.7) that they felt 'closed in' as if they 'couldn't breathe' because there were too many people and the constant changing of classrooms was stressful. In another study, neurodivergent pupils described the environment as 'cacophonous, chaotic and invasive', a place of 'confusion', especially in corridors (Birkett et al., 2022, p. 4). Noisy classes were also a source of stress. A participant in another study explained that he liked the playground because sound 'can travel anywhere' but in class, 'the door is closed, the windows are closed, the sound is trapped, just travelling around the room … it causes pain, it really hurts my ears and then I just shout and get angry' (Birkett et al., 2022, p.5).

The stereotype that autistic pupils do not want or need friends can also result in exclusion and marginalisation. Many autistic pupils report that mainstream settings, particularly post-primary, can be complex and demanding social environments. They often struggle to make friends, report being bullied, feeling lonely and isolated, and that their peers and teachers do not understand autism (Horgan et al., 2023). 'Sarah-Jane', in a study of friendship for autistic girls in Northern Ireland, told researchers that having friends was essential to making school endurable (Goodall & MacKenzie, 2019, p.508): 'I always felt very stressed, anxious and out of place. I felt hurt when excluded by "friends" from joining in with an activity or left out … when they met up after school'. Her experience of school is common (Sedgwick et al., 2019). What can seem like harmless attempts to make autistic pupils feel included can increase the sense of isolation and humiliation, as Sarah-Jane explained: 'As usual, I had no one, and I was made to pair up with the teacher. I felt so little having to stand there…It was awful' (Goodall & MacKenzie, 2019, p.508). Research is clear that friends help neurodivergent pupils and pupils with MLDs feel less isolated and improve their school experiences.

What does inclusion look like?

To promote sensory inclusion, schools could consider using dimmer switches or turning off some lights, introducing soft furnishings and creating sensory rooms. Observing the acoustic properties of classrooms and recognising when autistic pupils are becoming stressed would also be helpful (Birkett et al., 2022). Communication inclusion can be enhanced by not viewing autistic forms of communication as 'deviant', 'odd', 'strange' or 'non-speaking', or assuming that their educational progress will be affected by communication differences. Although this is a complex area, pupils would like teachers to engage with their preferred mode of expression, speak naturally, listen to what the pupil wants to communicate and encourage the use of communicative supports and

computers (Wood, 2020). Communicative supports are tools, strategies and adaptations that help autistic people understand, express and participate in communication more easily, and can range from environmental supports such as low sensory rooms to visual supports such as cue cards.

Although many autistic pupils struggle to make friends or experience instances of bullying (Horgan et al., 2023), this does not negate the importance of providing opportunities for social connections. Pupils recommend the creation of peer-based, teacher-led, interest groups around shared hobbies and interests in a safe and structured environment, where pupils can meet peers with similar passions and develop meaningful friendships (Saggers, 2015).

While classwork and homework expectations can be stressful for many pupils, those on the spectrum or with MLDs often experience heightened levels of stress. To alleviate this, reducing homework loads and implementing flexible deadlines (Goodall, 2018b) can be beneficial. As autistic pupils often draw strict barriers between school and home, strategies to explain the meaning and value of schoolwork done at home (Payne & Swanson, 2022). Pupils also express a preference for scaffolded tasks, which provide additional support to complete tasks. In addition, access to assistive technology is particularly enabling, reducing, for example, the strain of handwriting, which allows them to focus on completing tasks well and on time (Aubineau & Blicharska, 2020; Saggers, 2015). Pupils also want their opinions to be considered in decisions that affect them, such as in the creation of Individual Education Plans (IEPs) and Personal Learning Plans (PLPs). Instead of making decisions without their involvement, pupils prefer, where possible, to work collaboratively with teachers and schools to ensure their educational support is personalised to their needs (Aubineau & Blicharska, 2020).

Teacher education in special and additional support needs is essential and is recognised as enabling inclusion. However, education must not be the kind that takes a ‘one size fits all’ approach. Being neurodivergent or MLD-aware is not enough, and neither is integrating such pupils into school. Pupils with SEN are sensitive to teacher attitudes and report that they experience significant barriers to learning, particularly in classrooms where teachers either lack relevant knowledge of their MLD and neurodivergence or are unwilling to support them (Goodall, 2018b).

Research also indicates that pupils want their teachers to be more understanding of their disabilities. While they do not wish to be treated differently from their peers, pupils want teachers to adopt flexible teaching methods and to attend to their individual needs. They also want teachers to listen to them, respect them and value their uniqueness, rather than simply categorising them as part of a difficult group labelled ‘autism’, ‘ADHD’ or ‘learning difficulties’, which can erase their individuality and heighten feelings of exclusion (Cook et al., 2018; Goodall, 2018a; Goodall & MacKenzie, 2019; Horgan et al., 2023).

What is good for SEN pupils is good for all pupils.

For many, inclusion means a sense of belonging, accessing resources that enable pupils to thrive, feeling academically capable and having opportunities to form friendships. Inclusion is valuable. It enhances learning for everyone, promotes equality, equity and non-discrimination and fosters respect and social cohesion. We could even say, to go back to Naoki, that inclusion means belonging to the 'regime of civilisation.'

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Pupils with SEN – an International Comparison

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Introduction

A conundrum that a lot of education systems internationally have been struggling with is the large increase in pupils with, or identified as having, Special Educational Needs (SEN). Over the past ten years, the number of pupils classified as having SEN in Northern Ireland has increased from 21% to 24%, while the percentage of pupils statemented has increased from 4.2% to 5.6% of pupils. This is a worrying trend as it suggests greater needs among children and young people and poses affordability issues to education systems, so in this article I will try to get below the numbers a little bit, by looking at the broader international and in particular, European, picture.

The European picture – big differences between countries

One of the phenomena we confront when looking at pupils with SEN are the stark international differences between the numbers of pupils designated with SEN in different countries. Comparisons are complex as definitions of SEN differ between countries and standard data is not collected. Nevertheless, when we look at the United Kingdom, we can see that rates of pupils with SEN differ from 9.5% of pupils in Wales to 40% in Scotland.

Prevalence of SEN in England, Wales, Scotland and Northern Ireland[2]

Country	Measure	Prevalence (%)	Year	Notes
England	SEN (EHCP or SEN Support)	19.6	2024/25	EHC plan 5.3%; SEN Support 14.2%
Wales	ALN or SEN	9.5	2024/25	Transition from SEN to ALN
Scotland	Additional Support for Learning (ASL)	40	2024/25	Broad category includes any identified additional support need
Northern Ireland	SEN (all stages)	20	2024/25	8% with a statement; 12% without

[2] Data for this table come from https://explore-education-statistics.service.gov.uk/find-statistics/special-educational-needs-in-england/2024-25?utm_source=chatgpt.com; https://www.gov.wales/schools-census-results-january-2025-html?utm_source=chatgpt.com; https://audit.scot/uploads/2025-02/briefing_250227_additional_support_for_learning.pdf?utm_source=chatgpt.com; https://www.education-ni.gov.uk/sites/default/files/2025-08/Special%20Educational%20Needs%20202425.pdf

We see a similar picture when we look at the picture internationally. While Ireland does not publish an annual SEN percentage, based on Economic and Social Research Institute (ESRI)/ National Council for Special Education (NCSE) analysis of *Growing Up in Ireland* data, prevalence for 2024 was estimated at 25% (Banks & McCoy, 2011). In Europe, the European Agency Statistics on Inclusive Education (EASIE) "SEN identification rate" measures the percentage of all learners formally identified as having special educational needs within recognised education settings. This measure tends to show lower prevalence than the United Kingdom measures, with Scotland here rated at 25% (though this is still the highest level in EASIE). Sweden has the lowest prevalence at 1%.

The European picture – a rise in SEN prevalence

Another major issue is the extent to which numbers have risen across countries in recent decades. The number of children with a statement of SEN in Northern Ireland rose by 51% (from 17,837 to 29,499) between 2017 and 2024, though in this period the categories and recording procedures changed twice. In England, the number of pupils with an Education, Health and Care Plan (EHCP) has doubled since 2016, and the number with SEN Support has increased by about 29.5% since 2016. In Scotland, the percentage of pupils requiring Additional Support for Learning rose from 34% to 40% between 2022 and 2024.

Across Europe, the proportion of pupils formally identified with SEN or additional learning needs has been rising over the past decade though the scale of increase and exact percentages vary widely because of different national systems and data-methodologies. The EASIE data, however, shows increases in almost all countries which have consistently reported their data (https://www.european-agency.org/activities/data/data-tables-background-information).

Why do the numbers differ so much between countries?

A first reason for the disparity between countries is that the process of identifying and classifying SEN is highly variable across countries and even within regions.

National policy frameworks and classification systems differ markedly. Some countries, such as Scotland, use broad, needs-based definitions that include a wide range of learning, behavioural and social difficulties. Others, such as Spain and Sweden, restrict SEN to medically diagnosed disabilities (Bossaert et al., 2015). The presence or absence of statutory plans (such as Education, Health and Care Plans, Statements or Coordinated Support Plans) and the criteria for accessing additional support vary widely, influencing both the number and profile of pupils designated as having SEN (Lamb, 2019; NAO, 2024). In some contexts, teachers are the primary gatekeepers, using subjective judgments and classroom assessments. In others, multidisciplinary teams or medical professionals play a central role. In Finland, for example, identification follows a *support tiers* model (general → intensified → special support). Teachers initiate support based on classroom observation, not medical diagnosis. By contrast, in Germany SEN categories

(Förderschwerpunkte) require assessment by special education professionals and Psychological Services; placement recommendations are external.

This is important, as SEN are sometimes seen as fixed and naturally present characteristics of the person. That is only partially the case, however. Obviously, SEN are real. There is no question that children have speech and language difficulties, ADHD or are on the autistic spectrum, to give just some examples. But the boundaries of SEN are often less clear, and labels such as anxiety disorders or emotional and behavioural difficulties lie on a spectrum that includes a range of needs, many of which may not lie outside variation within the general population of pupils (Banks et al., 2012).

Another reason for the differences between countries may lie in specific socio-economic characteristics of the population. Pupils from lower-income backgrounds, those eligible for free school meals and those attending schools in deprived areas are more likely to be designated as having SEN (McCoy et al., 2020; Keating et al., 2025; Strand & Lindsay, 2008). This may affect Northern Ireland, as the prevalence of child poverty at around 26% here is higher than the United Kingdom (24%) and Ireland (22%) (Eurostat, 2025; CSO, 2025). The continuing impact of the Troubles through intergenerational trauma may also impact prevalence in Northern Ireland (Purdy et al., 2021).

Why have numbers increased?

There are also a number of possible reasons for the increase in SEN prevalence. These again are both substantive and policy/provision driven. First, many studies highlight the role of greater awareness and improved screening practices among educators, parents and health professionals. As knowledge of neurodevelopmental differences such as autism or ADHD has expanded, and as inclusive education policies have emphasised early identification, more children are being formally recognised as having additional needs (Fudge, Schormans & Wilton, 2021; Lindsay et al., 2020). This is consistent with international evidence that increases in diagnosis often track professional knowledge and training rather than shifts in population health.

Second, increases in prevalence are partly the result of broader diagnostic and legal definitions of need. In several countries, including England, Scotland and Finland, the criteria for identifying pupils requiring additional support now encompass a wider set of learning and socio-emotional difficulties (Allan & Harwood, 2022; Graham & Jahnukainen, 2011). As a result, children who might previously have been regarded as “low-attaining” or “behaviourally challenging” are now more likely to be seen as falling under SEN categories.

Third, broader social and environmental changes may play a role. Research across national contexts has associated rising SEN identification with increased pressures, heightened mental health difficulties among young people and post-pandemic disruption to schooling and family stability (Eivers et al., 2023; Loades et al., 2020).

Finally, structural and policy incentives influence prevalence. In systems where access to additional learning support, funding or specialist provision is contingent on a formal

diagnosis or statutory plan, families and schools may be more motivated to pursue formal identification (McCoy, Banks, & Shevlin, 2012; Madriaga, 2018). This is well documented in England, where the number of Education, Health and Care Plans (EHCPs) has risen substantially (National Audit Office, 2024) and where recorded SEN prevalence is shaped not only by children's needs but by the administrative conditions under which those needs are recognised.

Taken together, these factors suggest that increases in SEN prevalence should be interpreted cautiously: they reflect changing measurement and support systems and increased understanding of SEN, as much as changes in children's developmental profiles.

Reducing the numbers – labelling and support

The increasing numbers of pupils identified as having SEN is a major challenge for the education system. The above suggests that it is not, however, an entirely organic phenomenon, but is linked to policy and practice and therefore at least to some extent malleable. So, what can we do? The aim here is not in itself to reduce the number of pupils with SEN, but to reduce the number of pupils whose needs escalate to the point that they require formal SEN identification by improving early support, teaching quality, inclusive environments and poverty reduction.

One of the most effective approaches is to improve the quality of early intervention and classroom instruction. Evidence from literacy and language development research, for example, shows that when schools provide structured early support, such as high-quality science-based reading instruction, early literacy intervention and explicit language instruction, fewer children later require targeted or specialist provision (Snow, 2020; Wanzek & Vaughn, 2007). This suggests that high quality teaching and early support can have a preventative effect on SEN escalation. Teacher training also plays a critical role. When teachers are equipped with the confidence and tools to respond to diverse needs within the classroom, fewer children are referred for formal assessment. (Florian & Black-Hawkins, 2011; Lindsay, 2020).

As SEN identification is linked to broader social and economic disadvantage, reducing socio-economic inequality and improving the wider conditions in which children grow up, through family support, for example, can help to reduce the number of pupils reaching formal thresholds of need. This is not a panacea, as the growth in SEN has outpaced any growth in social inequality over recent decades, but the correlation between SEN and social background is nevertheless clear across countries (Hutchinson, et al., 2021; Lenkeit et al., 2022; Kvande et al., 2017).

School-based mental health services, such as counselling, pastoral support and trauma-informed approaches have been shown to reduce formal referrals by addressing difficulties before they escalate (Loades et al., 2020).

There are also aspects of identification policy which can be addressed. Systems where resources are only unlocked through formal documentation, such as Education, Health

and Care Plans in England, tend to generate upward pressures on identification rates (National Audit Office, 2024).

An interesting case study of the latter is Wales. Similarly to Northern Ireland, Wales had a rate of pupils identified as having SEN of 22.6% in 2018. By 2025 this had dropped to 9.5%, contrary to the international trend and the trend in England, Scotland and Northern Ireland.

The reason for this reduction was the introduction of the Additional Learning Needs and Education Tribunal (Wales) Act 2018 (ALNET) and the accompanying Additional Learning Needs (ALN) Code. The Act replaced the previous Special Educational Needs (SEN) and Learning Difficulties and Disabilities (LDD) systems with a single, unified approach that applies to all children and young people aged from 0 to 25. Instead of using different categories and processes depending on the learner's age or educational setting, all learners who need extra support are now described as having Additional Learning Needs (ALN).

Central to this new system is the Individual Development Plan (IDP). The IDP replaces statements of SEN, School Action and School Action Plus, meaning that every learner with ALN is supported through one single statutory planning document. The IDP sets out the learner's needs and the Additional Learning Provision (ALP) required to help them progress. It must be reviewed at least annually to ensure that it continues to reflect the learner's needs and aspirations.

Under ALNET and the accompanying Code, a learner is regarded as having ALN only if their learning difficulties or disability call for additional learning provision (beyond that which is available in mainstream settings). The Code emphasises that if a learner's need can be addressed through good quality universal teaching, differentiated support or short-term targeted interventions, then that in itself may not be ALN (Estyn, 2023).

As a result, some learners previously categorised as SEN (particularly those with more mild or short-term support needs) are no longer identified under the ALN register because their needs can now, in principle, be met within inclusive mainstream provision. This focus on whether the additional support meets the statutory threshold for ALP has had a downward effect on numbers.

Summary and Conclusions

The paper highlights a substantial increase in the number of pupils identified as having special educational needs (SEN) across the United Kingdom and internationally. However, it demonstrates that these rising figures cannot be interpreted as a simple increase in the underlying incidence of need. Instead, they at least in part reflect differences in how countries define, classify and respond to learning, developmental and social-emotional difficulties. Scotland's broad Additional Support for Learning (ASL) framework, for example, captures a wide range of needs and therefore produces a much higher recorded prevalence than Sweden, where SEN is defined narrowly as medically diagnosed disability.

Greater awareness of neurodevelopmental conditions, broader diagnostic and educational criteria, increased mental health difficulties among children and adolescents and post-pandemic pressures have all contributed to greater recognition and recorded need. In addition, SEN identification is socially patterned: pupils from disadvantaged backgrounds are more likely to be classified as having SEN, reflecting the effects of poverty, stress and reduced access to early support (McCoy, Banks & Shevlin, 2012; Brown, McCoy & Banks, 2021).

Taken together, the evidence suggests that SEN should be understood as both a reflection of children's needs and the structure of educational and welfare systems. Systems that tie access to resources to formal diagnosis tend to drive identification upwards, especially where such support only kicks in at higher levels of identification. Conversely, systems that provide support based on need without requiring categorisation are less likely to escalate pupils into statutory processes.

This leads me to five main recommendations:

1. **Strengthen early and universal support**, especially in language, literacy and emotional regulation. High-quality early intervention reduces later escalation into SEN pathways.
2. **Invest in teacher professional learning and evidence-based pedagogy.**
3. **Allow access to support without requiring formal diagnosis**, reducing administrative incentives that inflate identification rates.
4. **Address socio-economic drivers of need** by reducing child poverty and strengthening family support services.
5. **Embed mental health support in schools**, ensuring that emotional and behavioural difficulties are addressed before escalating to SEN classification.

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Supporting learners who have special educational needs: how and why using digital technologies, including generative artificial intelligence, can help.

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Introduction

The first Northern Ireland Department of Education policy objective for special educational needs (SEN) is that schools can meet the needs of pupils with SEN and teachers and support staff, are supported to implement **child-centred, effective, evidence-based** interventions (Department of Education, 2025). This paper addresses some specific child-centred, effective and evidence-based practices in the adoption and use of digital technologies, including generative artificial intelligence (GenAI), to support young people in special schools (7,462 in Northern Ireland in 2025) in the areas of communication and interaction, cognition and learning, social, emotional and mental health difficulties and sensory and/or physical needs. While multiple special needs presented in the examples here will not necessarily be found in all schools, specific aspects could well be encountered and may therefore be relevant to support inclusion for learners with special needs in mainstream classrooms (58,211 in Northern Ireland in 2025) and in specialist provision in mainstream schools (4,559 in Northern Ireland in 2025)[3].

With a thirty-five-year legacy of a centrally managed Information and Communication Technology (ICT) infrastructure providing equitable ICT services in all primary, post-primary and special schools (Passey, 2024), and the piloting of GenAI tools for schools (Taggart & Roulston, 2025), Northern Ireland is fertile ground for innovative practices to emerge, to be shared and emulated, especially when compared with practices in other jurisdictions.

Flowing from a recent independent review of education in Northern Ireland (Independent Review of Education, 2023), an end-to-end revision of the curriculum and assessment (Crehan, 2025) is underway and a SEN reform agenda has been published (Department of Education, ibid). At the same time, interest in applying the principles of Universal Design for Learning to support learners (CAST, 2025) is attracting the engagement of a growing, cohort of teachers.

International research on GenAI uses for special and additional needs

The proportions of learners with additional or special needs are increasing (Whitford, 2025). In this context, recent research (Whitford, 2025) identifies forms of GenAI that

[3] Data in this paragraph from: Special Educational Needs/Disability Reform Agenda, Department of Education (2025). https://www.education-ni.gov.uk/publications/sen-reform-agenda

have been reported to support learners with additional needs. To support fine motor disability, a text-to-image generator has been used to create content from ideas; for anxiety or stress, a chatbot assistant has offered advice and supported personal discussion; for autistic spectrum disorder, an avatar or humanoid robot has supported social skills and conversation; for attention deficit hyperactivity disorder, an AI-assisted task manager has helped to develop plans and timeframes for action; for visual impairment, a chatbot assistant has supported conversation, has created content, described images and helped with proofreading, while a speech-to-text generator has created text from speech; for those with English as an additional language, a chatbot assistant has supported conversation, translated from and to English, provided summaries as well as supporting grammar and sentence structure; and for dyslexia, a chatbot assistant has summarised text, as well as reviewing grammatical, spelling and word-level errors.

Other literature reviews, however, whilst showing positive outcomes, highlight some concerns. Wang, Tlili, Khribi, Lo and Huang (2025), from a review of studies, found that most of the studies focused on uses of GenAI that supported emotion and attention through mediation activities, that GenAI was used commonly as a pedagogical assistant, that positive statistical significance was not clear and that concerns were raised about ethical, competency and technical aspects. In the context of uses of GenAI to support neurodivergent students, Ronksley-Pavia, Nguyen, Wheeley, Rose, Neumann, Bigum, and Neumann (2025) concluded from their literature review that GenAI had "potential to provide real-time, personalised support for students as well as reducing administrative burdens for educators. However, notable concerns emerged regarding information accuracy, over-reliance on GenAI, privacy considerations and the need for human oversight" (p.1).

Evaluation of GenAI examples in use in Northern Ireland special schools

In Northern Ireland, special schools are using GenAI innovatively to support learners with additional or special needs. The following sections (i) summarise use cases stemming from the evaluation of a proof-of-concept project, and (ii) illustrate use evidence from one special school. Both sections are accompanied by links to several video case studies.

Northern Ireland Education Authority GenAI Proof-of-Concept project

The Education Authority's (EA) Education Information Solutions (EdIS) programme established two GenAI "proof-of-concept" projects, supported by Microsoft[4] (MS) and Google[5], in which 194 participants, across all school types, developed 1,220 'use cases' across aspects of education in schools, from administration to curriculum and

[4] https://www.youtube.com/watch?v=5O8_fpCya40&list=PLiluTszfwwMIfO-AFOEsmJI22A3RgWd5O
[5] https://www.youtube.com/watch?v=oouEQqwiqWw

assessment, saving an average of between 10 and 12 hours in teacher workload per participant per week.

Taggart and Roulston's (2025) independent evaluation showed that some teachers using MS Copilot were reporting increases in teacher uses of GenAI to support learners with special needs. Notably most participants within this study taught within mainstream schooling, with only 3.2% respondents working within special school contexts.

Participants in this study reported a 12.6% increase in weekly use of GenAI to support SEN learners, with 90% of respondents rating the impact on SEN as beneficial/highly beneficial. It was reported how GenAI was enhancing learning through, for example, adaptive assessments and innovative content creation for individual needs, enhancing accessibility and reducing disparities in educational experiences for children with SEN.

Use cases were categorised by participants from a variety of contexts to be impactful for learners with special educational needs. Teachers reported that MS Copilot was particularly valuable for synthesising complex information, producing concise summaries for colleagues and generating targeted resources. Reported applications included condensing multi-agency reports into accessible bullet-point formats for subject teachers, adapting lesson plans for learners with specific learning needs and producing materials such as social stories and risk assessments. Some staff involved in managing SEN interventions also described using MS Copilot to support formal processes, for example by drafting letters for appeals or rewording individual education plans to improve clarity. The timesaving on administrative tasks supports teachers and releases their time to focus more on addressing needs in the classroom.

By contrast, Google Gemini was frequently associated with classroom-based adaptation and accessibility. Teachers highlighted uses such as producing differentiated worksheets, generating personalised reading materials, creating bilingual or simplified resources and adapting content into audio or visual formats. Voice-to-text functionality was also employed during SEN meetings, with Google Gemini subsequently used to structure the notes into actionable plans. Several teachers reported employing Google Gemini to develop home–school resources aligned with report comments or specific targets for learners.

Overall, teacher accounts suggest that MS Copilot was predominantly used for the distillation of professional documentation into clear, actionable outputs, while Google Gemini was closely linked to multimodal classroom adaptation and integration with collaborative platforms such as Google Classroom.

The Northern Ireland Schools ICT Excellence Awards

Established in 2015, schools apply for annual competitive awards against judging criteria and a scoring rubric. Five judges independently assess 2,000-word entries and, following amalgamation of scores, select approximately 15 of the highest scoring entries to be visited (approximately 20% of entries) to evaluate the evidence of excellence in the use of digital technologies and, individually again, to re-score each school to select winning,

highly commended and finalist entries. Typically, five special schools enter annually (13% of all 39 special schools). The application of GenAI emerged in entries in 2025.

Clifton Special School, a recipient of the ICT Excellence Awards in two years (Smith & Anderson, 2024, 2025), serves learners aged 3 to 19 years with a wide range of severe and profound learning difficulties. Many experience complex interactions of medical needs and limited verbal communication, requiring significant support to meet their holistic needs. The school demonstrates exemplary practice in the application of GenAI, for learners who may otherwise have no conventional means of expressing themselves, giving "*learners … both a voice and choices*" (Smith & Anderson, 2025, section 4.2.4). The teachers aim to enrich communication of the learners' emotions, thoughts and ideas through digital art and music demonstrating how technology, when applied with care and purpose, can unlock potential and amplify learner voice.

The teachers apply GenAI to streamline administrative and record-keeping tasks, releasing valuable time to develop comprehensive, individualised needs assessments. These assessments, co-created with staff and parents, help identify where digital technologies and the application of GenAI may have the most significant impact for each individual learner.

For learners with profound and multiple learning difficulties, many of whom are non-speaking, GenAI applications have opened new pathways for communication and creativity. Historically, creating artwork required 'hand-over-hand' assistance, and music-making was often inaccessible. Now, by combining eye gaze and body-tracking technology, touch screens and GenAI tools, learners can interact with digital content using their eyes and their movements. They can, for example, express preferences, make choices over words and objects, pick colours, images and sounds and sequence storylines to create musical compositions. This combination of technologies enables them to describe and design their own creations; artwork that reflects their ideas and music that resonates with their emotions. A GenAI composition tool brings these visions to life, allowing the learners to produce original pieces that are unmistakably theirs. These are not approximations of their intent, they are authentic expressions of self.[6] This shift from passive participation to active creation is having a profound impact. The learners are no longer recipients of experiences; they are authors of their own stories, composers of their own songs and artists of their own visions. Teachers report increased engagement, empowerment, joy and pride. The classroom becomes a space of shared discovery, where every learner is seen, heard and valued. Parents, carers and the wider community are moved by performances and exhibitions, reinforcing the school's culture of inclusion and respect.

Clifton's approach exemplifies how GenAI, when thoughtfully embedded, transforms education. It empowers learners with complex needs to participate meaningfully, make choices and share and celebrate their achievements. It shifts the notion of inclusion from that of bringing learners into a system, to that of reshaping a system to honour every learner's voice.

[6] Link to the learners' composition here: https://tinyurl.com/2x2dxurn

Conclusion

It is clear from both research and practice evidence that using GenAI can support learners with specific or additional needs. However, whilst the concerns and challenges of using GenAI should always be considered in each educational context, there are principles that could apply in any of those contexts (building on the work of Whitford, 2025):

- GenAI tools can support the individual – but the specific or additional needs of the individual need to be recognised carefully.
- Additionally, the use of any GenAI tool needs to be carefully trialled with the individual before wider use is considered.
- Motor disabilities might be supported by text-to-image, speech-to-text or eye-tracking movement choice tools.
- Hearing disabilities might be supported by voice-to-text tools.
- Visual disabilities might be supported by speech-to-text or chatbot assistant tools.
- Anxiety, stress and autism spectrum disorders might be supported by chatbot assistants, avatars or humanoid robots.
- Attention deficit hyperactivity disorder might be supported by AI-assisted task management tools.
- Language limitations might be supported by chatbot assistants.
- Dyslexia might be supported by chatbot assistants, spelling or grammar checking tools.

GenAI has been shown to support learners with specific and additional needs, both through cases reported from practices developed in schools and those researched through specific methodological lenses. Examples of applications supporting communication and interaction (language limitations), cognition and learning (dyslexia), social, emotional and mental health difficulties (anxiety, stress, autism spectrum disorder and attention deficit hyperactivity disorder) and sensory and/or physical needs (motor, hearing and visual disabilities) are all worthy of being shared in ways that teachers can consider applying in their own contexts.

However, Mollick (2024) has argued that the artificial intelligence available now represents only the earliest and least capable versions we will ever encounter, with future systems set to be considerably more advanced. For teachers and education stakeholders, this signals both opportunity and responsibility. The opportunity to harness GenAI in ways that enrich teaching, learning and accessibility, and the responsibility to ensure these tools are implemented ethically, inclusively and effectively. For learner inclusion, the potential affordances are significant. These range from personalised support and adaptive content to communication aids that can foster independence and agency. These benefits, however, will only be realised if teachers are prepared through sustained professional learning, collaborative experimentation and critical and system-wide reflection. As GenAI continues to evolve, so too must professional learning

opportunities and competence frameworks, ensuring that every learner can benefit equitably from the most advanced and supportive affordances of digital technologies.

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