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**RESEARCH**

# Socio-Material Realities of Inclusive Pedagogy for Autistic Pupils in Mainstream Primary Schools in the UK

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Socio-materialist theories of education highlight the importance of material practices alongside social practices within learning experience. Little is known about inclusive pedagogy for autistic pupils, but this theoretical approach is of relevance since autistic people describe meaningful connections to material things. The aim of this study was to explore the nature of inclusive pedagogy for autistic pupils through the development of two case studies. Research questions focused on tracing the socio-material realities of learning, with information gathered in the form of video recordings. Three realities of learning are described: thinking about maths, asking sensitive questions about the social world, and doing 'hard work' and making mistakes. The analysis shows that materialisation per se does not benefit autistic pupils, but can be used to support learning in certain circumstances, particularly where inherent social meanings are more easily made visible. The analysis shows that supportive relationships are also important sources of support.

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**Keywords:** autism; inclusive pedagogy; specialised practices; socio-materialism

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## Introduction

Despite different interpretations of what inclusion means in practice, the agenda of inclusive education continues to be promoted at government and institutional levels (Qvortrup & Qvortrup 2018). In Wales for example, where the research reported here took place, current curriculum reform is focused on developing educational practices and quality teaching that ensure the engagement of all pupils, whatever their individual needs (Donaldson 2015). Rather than specialised practices that focus on pupils' deficits, inclusive education is currently conceptualised as the ability of ordinary teachers to create contexts for learning to support the participation of everyone (Black-Hawkins 2017). How teachers perceive pupils and how they adapt ordinary practices in a way that recognises diversity is seen to underpin successful inclusion (Florian & Beaton 2018). The inclusion of autistic pupils has been conspicuously hard to achieve in this respect, however, with children and young people at much greater risk than their peers of being excluded from school (Moore 2016). Autistic pupils' experiences of schooling have been associated with negative attitudes by teachers and teacher stress (Cappe et al. 2017; Roberts & Simpson 2016), higher rates of social exclusion and bullying (Humphrey & Hebron 2015), and poor educational outcomes (Keen, Webster & Ridley 2016; NAS 2016). Many autistic pupils report feeling unhappy in school and describe school as a place where they feel neither understood nor accepted (APPGA 2017; Williams, Gleeson & Jones 2019).

Research findings are stark in relation to the difficult experiences faced by autistic pupils in our schools today, but research also pinpoints aspects of good practice that support successful outcomes for some pupils. It is apparent that autistic children and young people are responsive to a range of educational approaches in terms of their learning, for example, though what aspects of support are effective is less clear (Parsons et al. 2011). Elements of best practice in autism education are identified as features of school improvement that are generally effective in raising pupil achievement; these include good leadership, clear vision, strong relationships, high expectations of pupils, quality assessments and close working with families (Charman et al. 2011). It is unclear whether the notion of specialised support is an important one for autistic pupils. Wood (2018) found that visual timetables, now-and-next schedules and choice boards were used to control pupil behaviour and override pupil choice, but that authentic and supportive dialogue was much more effective in supporting pupil understanding. Similarly, interventions designed to support the development of communication may overlook children's agency and linguistic accomplishments and serve to deprive them of authentic forms of interaction (Sterponi, de Kirby & Shankey 2015). When consulted about what improves their educational experience, autistic children and young people emphasise good relationships with teachers and peers, the importance of acceptance and understanding, and the general ethos of a setting along with suitable environmental conditions (Saggers 2015; Williams & Hanke 2007).

What seems apparent is that autistic children and young people have mixed experiences of learning depending on the quality of relationships and support. Support may focus on 'normalising' an autistic pupil within a setting, for example, by privileging speech over other forms of communication, but may equally advocate for non-ableist ways of interacting with others (Ashby 2010). Different power relations between school staff and pupils may operate according to different sets of priorities. Staff may prioritise conformity and compliance in relation to the curriculum, or they may allow the pupil to guide their pedagogical decision-making and seek more equality within learning relationships (Wood 2019). The role of teaching assistants is important here since it is they who often provide support to autistic pupils and constitute a child's closest relationship in school (Symes & Humphrey 2012). The use of teaching assistants to provide support to pupils has been associated with lower expectations of learning achievement, less effective pedagogies and greater exclusion (Webster & Blatchford 2019), and findings in relation to autistic pupils convey a similar picture (Symes & Humphrey 2011). However, there is evidence that relation with teaching assistants can also be experienced as a positive influence and reassuringly supportive, allowing pupils to feel understood and more confident to engage (Conn et al. 2018; Wood 2018).

The range of learning experiences for autistic pupils described by research highlights the need to gain a better understanding of precise configurations of learning conditions that support good outcomes. The *situatedness* of situated learning has perhaps been neglected for this group of pupils, as it has been for other pupils who require extra support for their learning (Alexander 2015). For autistic pupils, little consideration has been given to the exact ways in which learning unfolds, with more attention given to 'best practices' that exist in a pre-given form (Guldberg 2017). Situated learning is concerned with personal ways of knowing and calls attention to the relationship between the pupil and their environment. Social relationships with teachers and peers, language and cultural norms are important features of learning environments, but increasingly material aspects of learning are seen as of relevance, too (Sjödin & Wahlström 2017). A socio-materialist perspective on learning recognizes the agency of the body and material artefacts and seeks to examine how pedagogy is enacted by teachers through dialogue and relationships, but also in the way textbooks, school equipment, learning technologies and other material resources are used, and how pupils bodily perform their learning (Fenwick & Edwards 2010). The development of new materialist theories of education has meant renewed interest in the ideas of John Dewey, who defined good education as arising from the interplay of child, teacher, curriculum content and material phenomena. Dewey (1902) viewed classrooms as places of discovery and experimentation, where the relation between people, ideas and objects is a holistic one that is always in an interactive state of 'becoming'. For Dewey, thought and the material are irreducible, though the latter manifests meaning for the individual in ways that are often overlooked in favour of social aspects of learning (Meager 2018). Dewey emphasised education as process and the curriculum as emergent out of children's aesthetic, emotional *and* material engagement, arguing that reassembling all aspects of experience is what is required in research (Hopkins 2018).

When considering autism and education, an approach to analysis that recognizes the material alongside the social within educational experience has strong appeal. Savarese (2014) notes a proclivity towards privileging experiences with objects in the writings of autistic people and attributes this to greater attentiveness to the nonhuman over social stimuli. Autistic perception has been described as providing a body-world experience that does not lend itself easily to the creation of social meanings (Manning 2016) and autistic people often depict their sensory experience of objects in powerful terms. The experience of objects is sometimes described as giving rise to a greater sense of connectedness than with human beings and to a feeling that objects are alive and communicable with (White & Remington 2019, Williams 1998). In autistic autobiographies, writers regularly describe themselves as children attending to the material features of their environment more than any social aspects, finding these to be less overwhelming, more meaningful and a source of greater satisfaction in terms of relatedness (Sainsbury 2009). Like many autistic writers, Gerland (2003) notes that it was often the material aspects of her environment that exerted the most influence on her learning and formulation of ideas about the world as a child. This raises the possibility that material aspects of learning hold more importance for autistic pupils in schools. The aim of the research reported here was therefore to examine in detail the ways in which pupils participate in everyday learning interactions with their teachers and teaching assistants, taking in both social but also material realities of learning. In particular, the research sought to investigate whether material aspects of learning were a particularly important feature of pedagogy for autistic pupils in mainstream settings.

## Method

The study involved the development of two case studies in two mainstream primary schools in an urban centre of south Wales in the UK. The cases were designed to illustrate effective inclusive pedagogies for autistic pupils and these settings were identified via professional contacts as providing successful placements for pupils on the spectrum; that is, children were seen by their teachers and parents as settled in school and making good progress. The schools were local to each of the pupils, and staff in both participating schools had experience working with other autistic pupils over a number of years.

It was proposed that, for the study, video data was needed in order to gain naturalistic information about interaction, but challenge was seen to exist in the busier environment of the mainstream classroom and the sensitive nature of video research (Flewitt 2006). Following approval by the faculty ethics sub-committee at the University of South Wales, recruitment of school staff and pupil participants was carried out through an extended series of conversations and meetings for the purpose of explaining the project and building trust. In each school, it was agreed that the participating

adult should be the teaching assistant who was providing support to the pupil participant. As a way of addressing possible power imbalances in the research design (Vaswani 2018), adult and child participants were asked to agree upon a method for the collection of video material and identify suitable learning activities to record. In one school, the camera system Swivl, which was already in operation in classrooms, was identified as a suitable method for the recording of learning interactions that took place in the classroom. In the other school, a small maths group session was identified as a suitable site for data collection. The autistic pupil was described as participating more readily in this smaller group than in the larger whole class group, and the teaching assistant who taught the group said that she was happy for the researcher to video it over a two-week period. Though this group was usually taught within their classroom, for the purpose of videoing, particularly for the recording of sound, it was re-located to an adjacent classroom. The extended process of recruitment necessitated the focus on a small number of cases, though these were intended to provide in-depth information about complex social phenomena rather than a more generalised account (Yin 2018).

Informed consent was gained from the teaching assistant in each school and the parents of the autistic pupils. Following this, the researcher met with pupils in school, with their teaching assistant present, to gain assent. Both pupils, boys aged 9 and 10 years old, had a diagnosis of autism and both had been educated in their respective settings since Reception class (4 years old). In each case, the pupil participant was presented with information about the project in verbal and written form using clear language and asked if they had any questions. One boy readily agreed, but the other had a reservation and needed reassurance that the video footage would not be uploaded to YouTube. The researcher explained to him that he and his teaching assistant could decide what video material to share and that only they and the researcher would see the material. Following this explanation, he also readily agreed. Additional consent was sought from the parents of children participating in the maths group and from the children themselves. Adult participants were provided with information about ethical considerations, such as the need to be discrete about the purpose of the filming, and to ensure that non-participant children were not recorded. It was emphasised that adult and child participants had control over what data were put forward for analysis and could decide whether to upload a session they had recorded to a shared Google Drive file account, to which only they, the researcher and the school ICT lead had access.

Video footage of 15 learning interactions was recorded, comprising 330 minutes of data in total. Initial analysis of data by the researcher followed the guidelines provided by Heath, Hindmarsh & Luff (2010). This involved a preliminary review of the video recordings in order to gain an overall impression of the content, followed by a substantive review where the content of each clip was logged and indexed in terms of what the interaction was about, that is, the lesson content and purpose or nature of the teacher-pupil interaction. In order to examine what actions were being accomplished through talk and interaction, a detailed transcription method was applied (Jefferson 1984 – see Appendix). The most prominent feature of the data at this point in the analysis was that different sites of interaction supported the enactment of different priorities and concerns by teaching assistants and pupils. With this in mind, selected clips and initial interpretations were explored further with child and adult participants in follow up visits to schools. More formal, semi-structured interviews were also conducted with adult participants to address general questions about their practice.

## Findings

From the analysis, possibilities for action within learning contexts appeared to emerge from the ways in which pedagogical priorities interacted with material practices and spatial arrangements, and the role of discourse in this (Fenwick & Edwards 2010). Findings are presented in relation to three realities of learning for an autistic pupil: for one pupil, Henry, in relation to thinking about maths, and for the other pupil, Dante, in relation to asking sensitive questions about rudeness, and doing 'hard work'. Each reality is used to illustrate important relational, discursive and material features of learning contexts, including ways in which the socio-material was mobilized to support pupil learning.

### Case study 1: Henry. Thinking about maths

Henry, aged 9 years, was being taught within a mainstream class for most of his school week, though he was included in regular small groups, for example, for his maths lesson each morning. Henry was described by school staff and his mother as very happy in school, particularly enjoying the routine, structure and predictability that school provided. He was described as extremely motivated as a learner, always eager to engage, fond of being praised and making good progress in all areas. Some specific needs were mentioned by adults in relation to Henry—for example, always needing to be the first in his class line in the mornings—but this was seen as something that was essential for him, and therefore an arrangement that needed to be in place as a matter of course. Henry's teacher commented that he coped well with the verbal and written language level of the classroom and did not need support for communication, though he was more forthcoming in small group situations.

### Pedagogical practices used with children who need extra support for their learning

The maths group that Henry participated in each morning had a small number of children, all boys, who needed extra support for their learning of maths. The group was run by a teaching assistant, Mrs Lewis, who had many years of experience working with children with special educational needs, and who had known Henry since Reception class (aged 4 years). From the video data of the maths group, it was evident that the management of the group, organisation

of books and resources, and patterns of instruction and talk were used with an extremely high level of consistency. In her interview, Mrs Lewis said that the management of the attention of children in the group was a priority for her and something she felt underpinned children's ability to learn. The practices she employed with the group were ones she said she used generally with children who required extra support for their learning. Mrs Lewis was careful to ensure that children always had access to clear instruction and that the pace of the group was slow, with instructions and questions often repeated. Learning was visualised as a matter of course, teacher-pupil interactions almost always mediated by looking at a diagram or picture together. The experience of teacher-pupil relationship was a very positive and encouraging one, Mrs Lewis using children's own language to tell them often that they were 'winners' who were doing 'easy work' and were so good that they needed something more challenging. Mrs Lewis explained her belief that children need to feel they are valued, especially in the face of getting answers wrong, and that part of her pedagogical approach was to manage the experience of failure for children since she felt it reduced their capacity to learn.

### Material and physical aspects of learning

It was apparent that the process of doing maths in the group regularly involved actions performed on material artefacts for the purpose of calculation. Work on area and perimeter, for example, was performed by Henry and others as a series of physical actions in relation to shapes depicted in the maths textbook. The instruction, 'First you put your finger on a top corner, then you count down the squares, then you write that number in your book' was used to support children's calculation of area. These actions were used alongside language since Mrs Lewis also asked children to explain how they achieved an answer. As she said, she was more interested in children 'going through the process' of mathematical calculation than getting the correct answer, but part of that process was engagement with maths calculation as a materialised entity. Henry reported to the researcher that he found it difficult to express himself in the whole class group, but found working from pictures in a book easier 'because they tell you something'. In the maths group, he tended to express himself using language supported by actions performed on material objects as the following extract demonstrates:

1. Mrs L    how do we calculate the area ↑ (.5) because today we're calculating
2.            the area a:nd the perimeter ((*looking at books not children*))
3.            [how do we do it ↓
4. Henry    [we...we count the squares ↑= ((*pointing at corner of the shape in book*))
5. Mrs L    =yep

The translation of number and calculation into material entities was done in a variety of ways. For measuring, Mrs Lewis spent time showing the children the arrangement of numbers on a ruler. For adding and subtracting, a white board was used to show the process as a sequence of steps that needed to be made in terms of the placement of numbers on the board. In trying to identify where thinking about maths was located for Henry and his peers in the group, it appeared to be in the social, that is, in positive and encouraging relationships, but also in the material, that is, as action sequences and visually organised number. Specifically, potentially difficult discursive practices inherent in maths activity (Chinn and Ashcroft 2017) were 'de-representationalised' through spatial arrangements and the mobilization of material artefacts. It did not seem possible to translate all maths learning in this way however. Mrs Lewis used words such as 'the same', 'part', 'shorter than', 'longer than', 'side', but it was sometimes unclear the precise way in which a term was used, for example, 'side' in relation to sides of a shape or sides of a written calculation of the area of that shape. At such times, Mrs Lewis often tried to find another way of saying the same thing or else draw it on her whiteboard, but it was apparent that some language used in the session was more densely representational and less available to processes of materialisation and transparency.

### Case study 2: Dante. Asking sensitive questions and doing 'hard work'

The second and third realities of learning – asking sensitive questions about the social world and doing 'hard work' – are part of Dante's story, a 10-year-old autistic boy. He was supported by a teaching assistant, Amy, who had been working with him for three years prior to the research taking place. Dante was described by his teacher, teaching assistant and the school special needs coordinator as doing well in school and able to participate effectively in ordinary classroom learning with support. Dante was described by school staff as chatty and sociable, with his willingness to communicate with others verbally described in positive terms. It was notable from the video footage that Dante enjoyed a warm and affectionate relationship with Amy, Dante commenting when asked that Amy was 'very kind'.

### Asking sensitive questions about name-calling and people's rudeness

Dante was taught within a number of different groupings, predominantly as part of his whole class group, but also in smaller groups; for example, to work on a language support programme and in one-to-one sessions with Amy to carry out individualised programmes. The first part of the analysis of Dante's story uses a video excerpt captured by Amy and Dante and focuses on the materiality of spatial arrangements that allow difficult issues to be enacted and explored. In the excerpt, Dante and Amy are sitting at a table in the corridor just outside their classroom and engaged

in motor development exercises from a programme of work provided by an occupational therapist. Amy asks Dante which exercise he wants to do that day and the quality of their interactions is notably less formal than is evident from within-classroom interactions. There is a playful quality in the way Dante and Amy reverse their roles of teacher and pupil in this space and Dante enacts his affection for Amy, calling her 'Miss Lovely' at one point. Dante is colouring in to practise his fine motor skills and his work is intruded upon playfully by Amy who inserts the colour pink in his work, something that Dante responds to with an 'eww'. Dante tells her off for this and Amy responds with the comment, 'sharing is caring', said in a comical voice that makes them both laugh. Amy explains afterwards that this is something adults in Dante's life often say and her playful reference to it, therefore, as a less authoritative figure.

In this free, playful and more equitable space Dante begins to ask sensitive questions about what rudeness is and how name calling constitutes being rude. Asking 'loads of questions' was something Amy noted Dante liked to do. She thought this was important to him and something she therefore wanted to acknowledge and respond to if she could. In the video excerpt, Dante's questions about name-calling and people's rudeness are embedded in talk about people's names and being named, as well as talk about cars and favourite foods. Dante asks Amy if her mother named her and why she chose that name. The quality of the interaction is familiar and relaxed, but then Dante calls Amy a name, 'Miss Granny', and immediately asks if she likes that name and whether it is rude. By inserting the unkind name into the interaction, Dante performs rudeness within the interaction itself, which unfolds in this way:

1. Dante do you like that name
2. Amy no but what have I said about=
3. Dante =is it rude
4. Amy well yeh it could be rude cos you've got=
5. Dante =how
6. Amy you're calling me a name aren't you
7. Dante how rude (.) [very ↑
8. Amy [how rude=
9. Dante so so so rude ↑
10. Amy well I'm not going to cry about it because I'm not like that but if you said it to other people (.) other people might get upset about it (.) do you like being called names
11. Dante no=
12. Amy =no
13. Dante other people might get angry ↑
14. Amy yes that's right ↓

Enacting rudeness in this way seems to allow Dante to explore questions about being called names and how this relates to kind and loving relationships, but also degrees of unkindness, anger and hurt (see for example, line 9: 'so so so rude'). In doing this, Dante builds up to difficult questions—'Is it rude if you're calling people weirdo?'—by asking easier questions first, like 'Is it rude when you eat pickles?'. He also asks if rudeness exists when someone is not listening and does not hear the names they are being called. The sensitivity of Dante's questions is evident in the greater hesitancy of Amy's responses, but she does not dismiss his questions, and tries to respond in an explanatory way, though clearly cautious about where the conversation is going. It is at this point in the interaction that Amy begins to playfully insert the colour pink into Dante's colouring book and uses the material circumstances of the work task to inject some light-heartedness and humour into the conversation. There is a sense that in this outside-classroom space—where slightly different roles, relationships and material realities exist—difficult and sensitive questions about the social world are welcome, but can also be managed through playful and affectionate interactions.

### Doing 'hard work' and making mistakes

By contrast, patterns of interaction in within-classroom spaces were characterised by more formality and a shift in the power relations between teacher and pupil. The materiality of actions performed in class exercise books will be discussed next in relation to Dante and the reality of learning as 'hard work'. From evidence of the talk of children and adults who took part in the project, it was apparent that the notions of 'easy work' and 'hard work' held specific and shared meanings. The notion of easy work was associated by children with work that they felt they could do, that is, where they knew the correct answer and got things right, but the idea of hard work was slightly more nuanced. One notion of hard work was that children felt challenged, but nevertheless enjoyed themselves and had a degree of control. Dante's story provides the example of a Bingo rhyming word game that involved an element of challenge, but nevertheless was experienced by Dante as highly enjoyable.

A different kind of hard work also existed for Dante and for other children, in tasks where he had less control and could less easily see the nature of progression. Amy commented that an area of difference for Dante in school was accepting that he needed to move on to 'harder work', citing the example of an online maths programme. Amy said that Dante knew completing a level correctly meant that he then moved up to the next, more difficult level, and that he

was often reluctant to do this, though this was an area of development for him. The material reality of hard work often took the form of tasks carried in Dante's exercise book, but ownership of this was shared in the sense that Amy and Dante's teacher were highly vigilant about how work was set out on each page; for example, the placement of margins, headings and date. It appears to be the case that the concept of 'hard work' was manifested in increased formality and control of exercise books and the use of more authoritative teaching roles. For written work, the class rule operated that mistakes must be crossed out with a pencil and ruler, though this presented a difficult issue for Dante, who wanted to scribble out any mistakes with his pen. In school education, the materiality of a mistake is that it is joint-owned by pupils and teachers since mistakes give rise to knowing what needs to be taught. It could be said, in fact, that a teacher is a 'relational effect' (Fenwick & Edwards 2012) of a mistake, though this connection is a tacit one. Exercise books and written work ostensibly belong to individual pupils – Sam's maths book, Erin's poem – but this hides the reality of pedagogy as a shared undertaking and the materiality of children's work as co-owned. This is a hidden social meaning that may have been less evident to Dante by virtue of his autism compared to other children in his class (Endow 2012). Indeed, in his on-going asking of questions, Dante demonstrated himself that he actively sought clarification of social meanings as a way of enhancing his social understanding.

This kind of hard work was characterised by the use of specific support strategies. Amy described how she needed to provide 'prompts' for Dante at times; that is, a form of words always used in the same way to provide a structure for his thinking and language. One such prompt, the statement 'comma and, comma but', was used by Amy to encourage Dante to think in terms of a comma and a connective ('and', 'but') in order to extend the length of a sentence. Amy said that her repeating of this prompt resulted in Dante knowing that he needed to add a further word, such as an adjective, in order to produce a longer piece of writing. Another prompt was the question, 'What happened next?', which Amy used to support Dante's retelling of a story or writing about a topic. The mobilization of these prompts exerted more force over Dante's learning than simply reminding him of his individual learning target, which was to write extended sentences. As devices used to translate social expectations (Edwards 2012), they were minimally representational and provided transparency about what Dante needed to do, serving as objects to mediate the phenomenon of hard work.

### **The importance of positive experiences of relationships to learning**

What was also evident in the more formal space of the classroom, however, was that a warm and respectful relationship between Dante and Amy, and Dante and his teacher, existed here, too. Dante sometimes talked about cars, and Amy said that she defended his right to do this with other children. She usually reminded him that there was a time and a place for such talk and would say that they could talk about it later, which they often did. Amy also helped Dante manage the distractions of the classroom by keeping in her mind ideas he might forget and ensuring he took regular breaks from his learning. Overall, it is probable that the success of Dante's placement in the school was located in his ability to perform within the particular configuration of socio-material realities of his learning. Though some resistance and possible lack of understanding was evident, on the whole Dante appeared to be responsive to relational, discursive and material practices used to support him. Most of these were ordinary practices used with all children, with only a small number described as unique to Dante's individual needs.

### **Discussion**

This small-scale study aimed to provide in-depth information about the learning interactions of two well-functioning autistic pupils, in a mainstream setting, who were supported by experienced teaching assistants. Tracing the socio-material in pedagogy experienced by these pupils indicates that it was the same as that experienced by other pupils who also required support for their learning. Good teaching in this study appeared to exist in the ability of teaching assistants to adopt different teaching roles appropriately, at times more formal and authoritative, and at others, more informal and playful. In this way, a range of educational opportunities was provided to address academic, social and emotional learning, enacted in different pedagogic spaces. A core belief in the ability of all children to learn, whilst recognising differences between pupils and adapting existing practices to ensure their access to learning, appeared to be further effective practices. Such an approach has been described elsewhere as essential to fully inclusive education (Black-Hawkins 2017). The existence of inclusion in moment-to-moment negotiations within ongoing interactions is evident in these findings as it is elsewhere (Benjamin et al. 2003).

Pupils in this study were able to perform effectively within different spaces in response to a range of relational, discursive and material practices. They were motivated and assertive as learners, and were able to enact their priorities and concerns whilst being sensitive to the impact of these on those around. It is interesting to note that, by focusing on social as well as material realities, it is revealed that opportunities and barriers existed within both. The importance of warm and encouraging relationships is strongly indicated in this study, with evidence of pupils being able to make use of these to be reassured and feel supported. Equally, it is apparent that discourse was used to explore, explain and enact the social world. Actions performed on material artefacts served to create non-representationally-based learning opportunities, and seemed to benefit not only the autistic learner but other pupils as well. Group organisation, arrangement of equipment and language used as set phrases were some of the ways in which materialisation produced accessible learning contexts. However, there was evidence that difficulty existed in the socio-material, too. For example, this occurred in the experience of difficult social interactions (e.g. name-calling) and more dense discursive practices (e.g.

complex maths language), but also where material realities supported less visible social relationships and hierarchies (e.g. making a mistake and rules around this, progressing through learning levels). It does not seem to be the case that materialisation *per se* helps pupils on the spectrum, but that materialisation can sometimes serve to make social meanings less obscure, in the words of Latour (2005), by 'reassembling the social'.

This study had a number of limitations, not least of which is the small scale of its sample size. Though the small sample does not allow any firm conclusions about inclusive pedagogy for autistic pupils, it is hoped that findings from the research open up important avenues for further study. As a way of redressing possible power imbalances in the research design, adult and child participants were asked to make decisions about the collection of data. This could be seen as a further limitation that contributes to an element of bias towards preferred learning contexts and certain types of interactions. It is noted, for example, that all data gathered for this study involve interactions between pupils and teaching assistants, with no recorded interactions of pupils and their class teacher. Findings therefore need to be set within a context of pedagogy enacted by support staff, as opposed to class teachers in each case, with possible questions raised about the degree of inclusivity operating in the setting.

In terms of the implications of findings for practice, what is apparent is that support staff made sense of their responses to pupils' needs in terms of what was ordinarily available within a mainstream setting, rather than in the introduction and use of specialised practices. Providing clear explanation, making learning more concrete, understanding children better and making environmental adjustments were some of the rationale provided by the teaching assistants to explain their practice. There was no recourse by them to a specialised discourse of autism and education that, for example, children require visual schedules or need to learn social skills in discrete groups. Social learning was seen more as something provided as part of the everyday experience of school and taking place in informal and ad hoc ways through the adoption of non-authoritative relationships (Conn et al. 2018). The implication here is that using a specialised discourse of autism and education, one that is not shared within mainstream settings, may serve only to obscure what is already in place and operating effectively.

## Appendix

[	beginning of overlap in turns
]	end of overlap in turns
=	turn follows with no gap (latching)
(2)	pause in seconds
(.)	very short pause
:::	elongation of vowel sound
↓	falling intonation
↑	rising intonation
((action))	description of speaker actions

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## Competing Interests

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