Developing Motor Skills for Independence

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This Action Research case study was completed as part of the Department for Education (DfE, UK) nasen Universal SEND programme.

Abstract

Context: This action research was conducted in a specialist secondary school for pupils aged 11–16 with a range of complex needs, including autism, physical disabilities, and speech, language and communication difficulties. All pupils had Education, Health and Care Plans (EHCPs). The study focused on the explicit teaching of fine and gross motor skills to support pupils' independence and life skills, recognising motor development as foundational to writing and everyday functioning.

Aims: The research aimed to explore strategies and activities that could effectively support the development of fine motor skills in pupils with SEND. It sought to understand how motor skill development contributes to life skills and writing, and to identify barriers to accessing specialist support. The study also aimed to create accessible resources for staff and inform future CPD needs.

Methods: Two cycles of action research were undertaken, involving baseline assessments, structured motor skill sessions, pupil work analysis, staff interviews, and reflective teaching practice. Programmes such as *Write Dance*, *Dough Disco*, and *A Jungle Journey* were used. Ethical consent was obtained to publish anonymised data. A Padlet was created to share resources with staff.

Findings: Targeted motor skill teaching led to noticeable improvements in pupils' ability to navigate physical spaces, manipulate materials, and engage in mark-making and writing. Staff reported limited access to specialist knowledge and training, with many unaware of referral pathways to Occupational Therapy. The study highlighted the need for age-respectful, adapted resources and identified gaps in staff confidence and expertise.

Implications: The research underscores the importance of embedding motor skill development within the curriculum and providing staff with accessible, context-specific training. It calls for improved collaboration with health professionals and the creation of practical resources tailored to the needs of older pupils with SEND. These findings may inform future CPD and curriculum planning in similar settings.

Keywords

Inclusion, special educational needs and disabilities; fine motor skills; gross motor skills; independence; teachers' continuing professional development (CPD)

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Action Research for Inclusion and Special Educational Needs and Disability (ISEND): Case Study

Developing Motor Skills for Independence

The explicit teaching of fine and gross motor skills supports the development of children's life skills, as well as serving as a key building block for the development of children's writing (Special School, Secondary).

Contents

BACKGROUND INFORMATION

Type of setting	The research took place in a specialist secondary school for students aged 11–19 identified as having Special Educational Needs and Disabilities (SEND). The school supports a diverse range of needs, with all students having Education, Health and Care Plans (EHCPs). Students have a range of labels and diagnoses including autism, Moderate Learning Difficulties (MLD), Severe and Complex Learning Difficulties (SLD), Profound and Multiple Learning Disabilities (PMLD) and Speech, Language and Communication Needs (SLCN).
Age range of pupils	Class Group ranging from Y7-Y11 (age range 11-16) 11 students, all with Education Health & Care Plans (EHCPs)
Roles of the Research Team	Class Teacher

ACTION RESEARCH CYCLES
See Appendix 1 for the Action Research Cycles.

Ethical consent has been sought to publish this data anonymously.

SUMMARY

Research focus	Motor skills, writing, motor skills development, special school

Research question	What strategies and activities can be used to support the development of fine motor skills, which will develop children's life skills in a secondary special school classroom?
Overview/Key information	- Began the project by assessing children's motor skills. - Focused on a core set of interventions over 6 weeks. - Used observations and informal assessments to track progress and interviewed key professionals. - Found that gross motor gaps often impacted fine motor development. - Staff faced barriers accessing specialist support and training. - Pupils showed progress in independence and motor control. - Created a Padlet to share resources and ideas with staff. - Next steps: expand resources and seek OT-led training.
Evidence-informed practice	The explicit teaching of fine and gross motor skills supports the development of children's life skills, as well as serving as a key building block for the development of children's writing.

RESEARCH TIMELINE

November	December	January	February	March
Action Research Cycle 1 Step 1: Establish the research focus	**Action Research Cycle 1** Step 2: Study Steps 3-5: Plan 1	Step 6: Do 1 Steps 7-8: Review 1 **Action Research Cycle 2** Step 9: Study 2 Steps 10-12: Plan 2 Step 13: Do 2 Step 14-15: Review 2		Share and disseminate the research (anonymised) with other interested parties.

ACTION RESEARCH CYCLE 1

RESEARCH FOCUS: Step 1

Initial research interest, aim/question (Step 1)	How can we support the development of motor skills in a special school setting?

KEY LITERATURE SHAPING THE RESEARCH (STUDY 1): Step 2

Reference	Burrows, H., Christie, S., Orr, S. & Ostermeyer, Y. (2022). *The Jungle Journey - A whole class programme to develop fine and gross motor skills.* LDA. Connel, G., Price, W. & McCarthy, C. (2016). *Move, Play and Learn with Smart Steps*. Free Spirit. Hill, C. (2006). *Communicating through Movement.* Sunfield Publications. Oussoren, R.A. (2012). *More Write Dance*. SAGE Publications.

	Sherborne, V. (1990). *Developmental Movement for Children*. Press Syndicate Cambridge University.
Key point(s) of note	These texts explore the use of movement-based programmes to support children's physical, emotional, and cognitive development, particularly in inclusive and SEND contexts. *The Jungle Journey* and *Move, Play and Learn with Smart Steps* offer structured, whole-class activities to enhance fine and gross motor skills through playful engagement. *Communicating through Movement* and *Developmental Movement for Children,* emphasise the role of movement in fostering communication, self-awareness, and social interaction. *More Write Dance* integrates creative movement with early writing development, promoting literacy through kinaesthetic learning. **Key points of note** - Examples of typical motor skill development are provided. - Communication through movement as a strategy for developing relationships. - Strategies for developing gross and fine motor skills for children.

PLAN 1: Step 3

As part of the process of planning Action Research Cycle 1 and having completed the 'study' phase, the research question can evolve and become further refined.

Revised research question	How can we support the development of fine motor skills to support children's writing in a special school setting?

PLAN 1 and DO 1: Steps 4 and 6

Methods of data collection

- Observation of the class group
- Assessment of children's motor skills
- Informal interview with:
    - an Occupational Therapist focusing on motor skills progression
    - school-based Physiotherapist and Occupational Therapist
    - teaching and support staff in school about their expectations, understanding and experiences of supporting pupils with motor skills development

Description of research sample, timing and location

Participants

The participants are eleven students within the same class group. Students range in age from Year 7 (age 11-12) to Year 11 (15-16). Pupils are all part of a semi-formal learning pathway within the school. Students are working at a variety of cognitive and physical independence levels. Some students use Alternative & Augmentative Communication (AAC), some are identified with autism, and some are wheelchair users. Some students have physical disabilities, such as Cerebral Palsy.

Observation and Assessment

- The class took part in weekly, observed, focused motor skill sessions.
- Children's motor skills were assessed prior to starting focused activities. Motor skills were assessed using *A Jungle Journey* (Burrows et al., 2022). The book *A Jungle Journey* includes a screening tool consisting of 12 assessment activities with accompanying photocopies and a record sheet.

Each week, students took part in at least one teacher-led learning session of gross motor skills through *Write Dance* (movement focus), *A Jungle Journey* or *Sherbourne Developmental Movement,* lasting between 30-45 minutes. Formal opportunities for fine motor skills development were provided through at least one session of 30-45 minutes of focused learning using approaches including Dough Disco, *Write Dance* (writing focus), and sensory play.

The class also accessed fine motor skills informally through choices available in the classroom, such as sensory play and drawing. The informal choices drew on Maria Montessori's approach of providing activities containing aspects of everyday living, such as pouring, spooning and cleaning (Montessori, 2016)[1].

Interviews

I used informal interviews with eight teaching and support staff from informal, semi-formal and formal learning groups. These included Early Career Teachers (ECTs) as well as very experienced staff from both mainstream and special settings. These lasted around 30-45 minutes, and data was recorded in a summary sheet highlighting key points. I also interviewed an Occupational Therapist working at the local University, informally focusing on the development of motor skills and support in school. This was also recorded using a summary sheet to highlight main points.

PLAN 2: Step 5

Ethical consent was sought from each participant to publish this data anonymously.

REVIEW 1: Step 7-8

Data Analysis: process
Observation and Assessment I reviewed the evidence collected from the *Jungle Journey* (Burrows et al., 2022) baseline motor skills assessments and identified the most common 'gaps' in motor skills learning. Observations of students at work were synthesised and key points identified. *Interviews* The informal interviews with other teachers to identify areas of knowledge were summarised in a summary sheet, highlighting key points, such as areas identified for support and what resources would be most useful.
Summary of Findings
Research Question How can we support the development of fine motor skills in a special school setting?

[1] Montessori, M. (1912). *The Montessori method: Scientific pedagogy as applied to child education in "The Children's Houses", with additions and revisions by the author.* Translated by A.E. George. Frederick A. Stokes Company. https://doi.org/10.1037/13054-000

NB.
The initial research question evolved because I felt that the research would better incorporate the needs of the students if we focused on fine motor skills in a general sense and not limited to just writing skills.

Observation and Assessment

I reviewed the evidence collected from the *Jungle Journey* (Burrows et al., 2022) baseline motor skills assessments and identified the most common 'gaps' in motor skills learning.

I noticed that the gaps were not necessarily around writing and fine motor skills, but the students had significant gaps in gross motor skill development, which then impacted their fine motor skills. The students required further hand strength and fine movement skills needed for writing.

Observations of students at work provided information on students' areas of challenge and which skills were tricky for multiple students in terms of everyday activities and life skills.

Interviews

The interview with an Occupational Therapist (OT) suggested that fine motor skills are not only useful for writing but are also key to developing life skills. For example, crossing the midline of the body[2] and isolating a finger are key skills for putting on spray deodorant, and pinching fingers together is key for fastening buttons. The OT also highlighted a wide variety of underpinning knowledge that OTs can draw upon to support pupils, which is not ordinarily available to teachers.

Through interviews with other teachers, I identified that ease of access to resources/ideas would be key to sharing information and applying it in other class groups. Staff identified a lack of time and access to professional development opportunities as a challenge. Where professional development was available, it was not designed with the specific needs of the school's disabled pupils in mind and was not reflective of the challenges they face. Staff also identified that where they did attempt to seek out knowledge (for example, from the school's designated Occupational Therapist or Physiotherapist), they encountered a barrier: unless that particular student had an 'open' case with the health professional, they were unable to offer support or advice. Teachers also stated that General Practitioners (GPs) were unaware of the process to refer students to Occupational Therapy support for handwriting/motor skills, and that, as teachers, they were unaware of the process to request support.

Analysis and next steps leading into Action Research Cycle 2

The gaps in students' motor skills development are likely due to a variety of reasons. I did consider that some pupils required long hospital stays, had complex medical needs as younger children or had limited access to the conventional development opportunities, such as playing with toys, because of their Special Educational Needs and Disabilities (SEND) or special interests. Many of our pupils have not had access to the same range of play and life experiences as their mainstream peers, which may limit the development of their motor skills.

I also wondered whether families were forced to focus on navigating appointments, focusing on the biggest areas of need, which were often complex and varied. I considered for those students who were ambulant whether the expectations of what could be achieved and what parents aspired to or expected their children to achieve had an impact on their choice to pursue certain therapies or alternative inputs, for example, from private therapists. I also considered the role of culture, parental access to education, and parental values might have had, but considered this too large a topic to review in this study.

Interestingly, some of the pupils who had come to us from mainstream settings had well-developed fine motor skills (for example, they could form legible letters) but had poor gross motor skills (for example, putting on a coat or climbing stairs). These pupils stated that adults

[2] The midline of the body, runs from the centre of the head down the neck and torso and to the floor.

supported them with these tasks in primary school. I wondered whether a focus on academic achievement in these settings had supported a focus on writing skills - although they still lacked underpinning skills such as hand strength, dexterity and fatigued quickly when writing - but had not focused as much on their independence and skills for life such as dressing, eating, putting on a coat, navigating stairs or uneven surfaces.

The interview with the Occupational Therapist was really helpful in understanding the underpinning knowledge on motor skills development. The challenge I realised for teachers in school was partly just in identifying the difficulties our pupils may have. For example, I thought of one of my pupils who struggled to move around the page when mark making and only made small repetitive marks in a small area. I had identified that she needed some support to develop her writing, but I did not have the underpinning knowledge of what might cause it or how to support her. The Occupational Therapist asked a few questions and identified that it might be a weakness in her shoulder and suggested some activities to support her.

Teaching staff identified that ease of access to shared information was really helpful. Most staff reported feeling underequipped to manage the complexities in motor skills they saw, and did not have the training to support students effectively. They stated that support from 'experts' (Occupational Therapy) was difficult to get, and many of the teaching staff were unaware that parents could request Occupational Therapy support via the General Practitioner. This then raised another challenge of engaging parents to request the support. In discussion with some Curriculum Lead teachers, we established that some specialist training in fine motor skills and common challenges could be beneficial to staff, and that a specialist paediatric Occupational Therapist could provide this support.

Training and online ideas to support motor skills were often aimed at practitioners in Early Years settings, and were either not age-respectful or were too challenging for our pupils. Some resources needed adapting significantly before use, or pupils quickly reached a 'ceiling' in their skill development and could not progress through the programme.

Staff said an online bank of resources would be useful for ideas and the progression of skills. Having practical resources was also identified as being key to the success of pupils' progress.

Next Step(s): Action Research Cycle 2
Following the analysis for Cycle 1, I plan to:

- Develop a series of classroom-based activities that support development and progression in fine motor skills that are age-respectful and easily accessible for students. Put together in a Padlet that other teachers can access.
- Meet with the Occupational Therapist, department lead and other staff to discuss further training or teaching opportunities for staff to develop knowledge.
- Continue focused motor skills sessions using *Write Dance* and *Jungle Journey*, *Dough Disco* and *Squiggle Me into a Writer* programmes where appropriate.

ACTION RESEARCH CYCLE 2

KEY LITERATURE SHAPING THE RESEARCH (STUDY 2): Step 9

Reference	Bason, S. & Bradley, A. (2022). *Squiggle Me Into a Writer*. Shonette Bason Ltd. Bason, S. & Bradley, A. (2023). *The Big Book of Dough Disco*. Shonette Bason Ltd. Morgan, A. (2016, February 11). Before They Write: Fine Motor Foundation. *Not Just Cute* [Blog]. www.notjustcute.com/2016/02/11/before-they-write-fine-motor-foundation/ Sheffield Children's NHS Trust. (2025). *Motor Skills - Top Tips.* https://www.sheffieldchildrens.nhs.uk/services/motor-skills/
Key point(s) of note	***Squiggle Me Into a Writer*** by Bason & Bradley (2022) presents a playful, movement-based approach to early writing, using music and physical activities to develop children's neurological and motor pathways essential for letter formation. ***The Big Book of Dough Disco*** (2023) compiles a comprehensive, science-informed programme that strengthens fine motor skills through rhythmic playdough exercises, supporting handwriting readiness in a fun and engaging way. Amanda Morgan's blog post, ***Before They Write: Fine Motor Foundation***, emphasises the importance of hands-on, play-based experiences to build the fine motor strength and coordination children need before formal writing begins. The **Sheffield Children's NHS Trust** resource outlines practical strategies for supporting motor skill development, highlighting the role of repeated practise, age-appropriate milestones, and step-by-step guidance in fostering both fine and gross motor abilities. **Key points** 1. Engaging in a variety of motor skills activities helps develop different muscle groups and supports motor planning, which is essential for coordinated movement. 2. Motor skills are crucial for everyday life tasks, such as crossing the midline or understanding body position (proprioception), which enable actions like wiping after using the toilet. 3. Multi-sensory learning experiences—using touch, movement, sound, and sight—help embed learning more deeply and effectively.

PLAN 2: Step 10

Revised research question	How can we support the development of fine motor skills to support skills for life in a special school setting?

PLAN 2 and DO 2: Steps 11 and 13

Methods of data collection *Observations* Observation of the class group in 1:1 learning, small groups and whole groups during focused learning, formal learning and informal opportunities. *Pupil work analysis* Collection and analysis of written work from those pupils who can mark make with intent to write. *Reflective thinking* Reflections of my own teaching and the progress of pupils. **Description of research sample, timing and location** The research group remains the same.

PLAN 2: Step 12

Ethical consent was sought from each participant to publish this data anonymously.

REVIEW 2: Steps 14-15

Data Analysis: process
Data from each data source was reviewed, and key points were identified.
Summary of Findings
Action Research Cycle 2 Research Question How can we support the development of fine motor skills to support skills for life in a special school setting? *Observation* Analysis of written work from those pupils who are able to mark make with intent to write showed a variety of areas for development with mark making. This showed the link between motor skills and writing skills, as the ability to manipulate a pencil or to make intentional marks is a key skill in progression to handwriting. These motor skills require addressing on their merit, not seeing only as a step in the writing process. *Pupil work analysis* The observations of the whole class, 1:1 work, and small and whole group work informed me where pupils were facing challenges in their skills or where there were significant gaps. Frustratingly, the level of expertise needed to support the students was beyond my capability. However, most of the students are not open to Occupational Therapy input from the NHS staff in school, and therefore, I was unable to support pupils to develop many of these areas. The written work from pupils identified where there were challenges in letter formation, moving hands across the page, pressure on the paper, wrist and finger movements. Again, I found the knowledge for these specific areas of development difficult to access, and I found myself unable to help pupils to progress because of my lack of knowledge. *Reflective thinking* Reflections of my teaching and the progress of pupils identified opportunities to embed motor skills learning, but also identified some limitations with skills and capacity to deliver this.

I was able to make some adaptions to meet children's identified needs. However, these changes tended to be generalised changes for the group, rather than specific, individualised support for specific pupils.
Analysis and next steps leading to the research conclusion
Despite the challenges, I did notice a significant change in pupils' fine and gross motor skills following the learning in class. Most pupils showed a marked improvement in navigating obstacles in class and problem-solving situations, such as how to navigate around a chair that was blocking their way. All pupils made noticeable progress in manipulating playdough, mark making with more control, and those who can write appeared to be writing with more control.

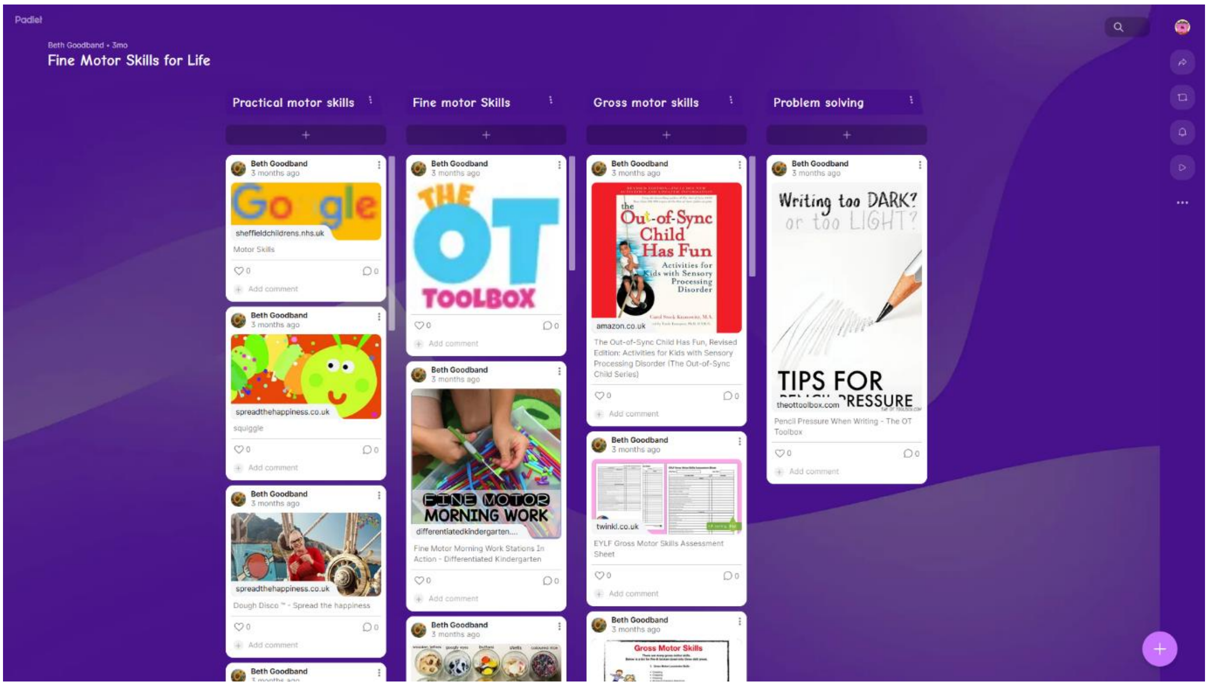
CONCLUSION

Research aim/question
What strategies and activities can be used to support the development of fine motor skills, which will develop children's life skills in a secondary special school classroom?
Conclusion(s) As someone who enjoys learning and 'finding out', I valued the opportunity to focus on developing my knowledge of motor skills. Through the project, the value of fine motor skills for life skills became more and more apparent and highlighted the interconnected nature of our students' learning and knowledge base. I found that I was able to identify challenges our students faced, but did not have the knowledge, or access to the knowledge, to make a difference. I found this frustrating, but did feel I had gathered a good 'beginning' set of activities to share with other staff. Although this did not fully address the complex nature of my pupils' needs, it did make a positive difference, and all pupils showed some level of progress or life skill learning. Upon reflection, I am trying to view this as the first step in making a bigger change and not the end of the journey, but remain frustrated at the ceiling we hit as teachers when trying to access the specific expertise held by (for example) Occupational Therapists. Frustratingly, it is our pupils who then do not make as much progress as they might.
Next Steps
- Continue to add to the Padlet of ideas to share with staff in school (see Appendix 2 – Screenshot of Padlet). - Seek out training from a specialist Occupational Therapist to disseminate information on motor skill development across the school. - Develop a writing curriculum to support motor skills necessary for writing. - Link with Occupational Therapists at the university to develop resources for pupils.

Appendix 1 – Action Research Cycles

Action Research Cycle 1	**Establish the research focus**	**Step 1:** Identify the ISEND area for development which requires research.
	Study 1	**Step 2:** Review the research literature.
	Plan 1	**First Plan**
		Step 3: Start the process of refining the research.
		Step 4: Decide what kind of direction you are going to take (direct or enquiry).
		Step 5: Consider research ethics (engage with the ethics checklist).
	Do 1	**Step 6:** Implement the first plan (either direct action or enquiry as action).
	Review 1	**Step 7:** Review and Reflect.
		Step 8: Analyse the meaning of the data gathered.
Action Research Cycle 2	**Study 2**	**Step 9:** Review further literature if required.
	Plan 2	**Second Plan**
		Step 10: Based on the 'reflect' phase, refine the research (this may involve revising or developing the research questions) and plan the next actions.
		Step 11: Decide what kind of action you are going to take (direct or enquiry).
		Step 12: Seek any further ethical permissions if needed (engage with ethics checklist).
	Do 2	**Step 13: Step 13:** Implement the second plan – (either direct action or enquiry as action).
	Review 2	**Step 14:** Review and reflect.
		Step 15: Analyse the meaning of the data gathered.

Appendix 2 – Screenshot of Padlet



https://padlet.com/bgoodband/fine-motor-skills-for-lifepad-3v3ml0t94fwwgpqn