Dinosaurs in the Classroom: Using the Creative Arts to Engage Young Children with Autism

Autism Spectrum Disorders (ASD) are neurodevelopmental disorders that are characterised by challenges with social communication and restricted, repetitive behaviours and interests (American Psychological Association, 2013). Young children with ASD frequently have impairments in early social communication skills including language and joint attention (Tager-Flusberg, 2000). This paper draws on a longitudinal research project that included in-depth qualitative case studies of young children with ASD transitioning to early education settings. Findings include the importance of nuanced approaches to inclusion for children with ASD, and the recognition that all children, including children who are nonverbal, have a voice.

Drawing from a review of the relevant literature, this article is structured around a discussion of the following themes: the challenges experienced by children with Autism Spectrum Disorders (ASD) participating with peers, the need for bespoke approaches to inclusion drawing on the creative arts and the importance of children's voice and agency when children communicate differently.

Keywords: *Autism Spectrum Disorders, early childhood education, creative research methods, creative arts, engagement, early intervention*

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INTRODUCTION

Significant developments in Early Intervention and primary school education provision for children with ASD in the Republic of Ireland have taken place (McCoy, Banks, Frawley, et al., 2014). Policy and legislation reinforce the inclusion of children with special educational needs (SEN) including children with ASD in mainstream educational settings. Considering the increased number of young children identified as having ASD (Maenner et al., 2020) currently estimated to be 1 in 54, and the variability of services, there is a need to develop effective interventions to increase their participation and engagement. As part of a larger doctoral study of the first author, a research project was carried out with Junior and Senior Infant class groups in separate classrooms. This paper explores the experiences of one child with autism aged 5 who transitioned from an Early Intervention Unit to a Senior Infant classroom in a mainstream primary school in the West of Ireland. The Creative Arts were used to help address the challenges of engaging and communicating with children with autism. Augmenting 'talk and draw' interventions (Leitch and Mitchell, 2007), developmental movement programmes, music, and child and hand sized puppets were explored as real and situated artefacts of the children's worlds.

This research enabled children to explore their worlds and deliberate on areas that affected their lives. Alex, a 5-year-old boy with autism and severe social and communication impairments is the focus child of this paper. Alex's bodily expressions and experiences through movement were considered communicative and agentic. The potential value for using the Creative Arts as a means of engaging children with autism is discussed. Implications relating to movement and voice are explored.

CONTEXT

International and national policy adopts a non-negotiable stance on including the voice of the child. Article 12 of The United Nations (UN) Convention on

the Rights of the Child (CRC) (UNCRC, 1989) recognises children as active participants in society with the right to articulate their views on matters that affect their lives. These rights ensure that their views are heard and respected (UNCRC, 1989). Lundy (2007) further proposes that 'children's right to express their views is not dependent on their capacity, it is dependent on their ability to form a view, mature or not' (p. 935). Prioritising children's 'participation' impacts positively on children's identity and confidence, promoting their overall development, autonomy, independence, social competence and resilience (National Council for Curriculum and Assessment (NCCA), 2009). Aistear: The Early Childhood Curriculum Framework (NCCA, 2009, p.2). reminds us 'that the child's ability to communicate is at the very heart of early learning and development'. According to the 'Communicating' theme of Aistear, children's language comprises more than spoken language. It includes art, Braille, dance, drama, music, poetry, pictures, sculpture, signing, and stories (p.34). While most children express themselves verbally and through writing, many continue to speak through body movement and nonverbal expression. Crucially therefore, all children should be facilitated to participate and communicate in inclusive environments, where diversity of communication is embraced. Ensuring all children are viewed as equal participants in early childhood education contributes to the creation of inclusive settings, where children's rights are acknowledged, and children's views valued. In Ireland, realising children's rights is expressly articulated in Better Outcomes, Brighter Futures: The National Policy Framework for Children and Young People 2014-2020 (Department of Children and Youth Affairs (DCYA, 2014). This Framework evidences our vision and obligation to children's rights.

The Challenges for Children with Autism
Children with autism have multi-system impairments (Srinivasan and Bhat, 2013). According to an enactive phenomenological view of autism (De Jaegher, 2013) autism is characterised by different ways of moving and perceiving. Movement has been recognised as a key characteristic of autism as well as a form of intervention. The movement perspective on autism acknowledges movement as a mechanism of sensory input as well as how we regulate movement that our bodies produce in response to environmental stimuli (Torres and Donnellan, 2015). We need to be more attentive to movement as 'cognitive style' (Peterson, Rayner, and Armstrong, 2009) and as a means of communication and voice (Twomey, 2018). The research described in this section considers challenges relating to the sensory motor development of a young boy with autism, as it encourages thinking to forefront a mind body association evident in recent developments in contemporary phenomenology (Fuchs and De Jaegher, 2009, de Jaegher, 2013). Intersubjectivity emerged from infancy research describing the interpersonal

interactions that develop between an infant and caregiver. Intersubjectivity has also been defined as the social activity between people and how they interact. It is concerned with our perceptions of others and our internal models of others' actions. Fuchs and De Jaegher (2009) suggest that intersubjectivity happens when humans enter a process of embodied interaction where they generate meaning together. De Jaegher (2013) proposes an 'enactive' account of autism which starts with the embodiment of an experience and incorporates the social interactions of people with autism. An 'enactive' account brings together the sensorimotor, cognitive, experiential, affective and social aspects, in an effort to bridge together people with autism and their all too often, challenging environment, in an effort to improve their quality of life.

Research suggests that the process of intersubjectivity starts from birth via imitation and mirroring processes that are foundational, initiating a sense of social connectedness and mutual acknowledgement with others (Rochat, Passos-Ferreira, and Salem, 2009). Challenges relating to intersubjectivity and social interaction exist for children with autism who may fail to develop more sophisticated intersubjectivity such as joint attention and complex social engagement with others. These developments prioritise the notion of a 'mind-body' connection which may be more representational, enactive and embodied of the child with differences in sensory expression than a mental representation (Fuchs and De Jaegher 2009, p.466) purported by cognitive theory or theories of mind:

'Movement forms the I that moves before the I that moves forms movement' (Maxine Sheets Johnston, 2011, p. 119).

THE RESEARCH PROJECT

The research project took place over four phases during an 18-month period. Children in the Senior Infant classroom were included in three phases of the study. Children in the Junior Infant classroom were included in phase four of the study. See table no 1. This paper will examine and discuss how Alex was engaged through a creative arts approach along with his peers.

Prior to each session, the researcher encouraged Alex' Special Needs Assistant Julie, to incorporate the Occupational Therapist's recommended sensory modulation and movement programme. This was established to co-regulate Alex physiologically prior to classroom participation. When Alex was regulated Julie included Alex in the group.

Table 1. Phases of Research

Phase 1:	'Facilitated engagement with Julie during Art activity and marla [rest of group talk and draw].	Low engagement rates during talk and draw activity
Phase 2:	'Facilitated engagement with peer mediation during Art activity' – this involved the researcher prompting Alex to respond to the peer(s) he chose to play with [rest of group talk and draw].	Increased engagement responses to peers' initiations and social engagement rates increased
Phase 3:	'Facilitated engagement using puppet imitation' – this involved the researchers conducting 1:1 imitation sessions between Alex and puppet. Followed by inclusion of peers	Moderate engagement rates in 1:1 interaction with puppet. Increased unprompted initiations and responses to peer
Phase 4:	'Facilitated engagement using puppet imitation, peer mediation and inclusion of microphone'	Higher engagement rate in 1:1 and group interaction

Nuanced Approaches to Children's Inclusion

Methods in this research project included qualitative, in-depth, longitudinal case studies which were undertaken with young children with autism, their parents and professionals, through semi-structured interviews (n-83) over a period of eighteen months. Children with and without the label of autism were participants in the research project. Recognising all children as agentic, their views and interests were prioritised. As Tisdall (2018) suggests, children were considered as active advisers and consultants during the course of the research. A range of research tools drawing on the creative arts was developed to facilitate children's engagement and responses. The creative arts were considered critical as a methodological tenet in encouraging children's engagement and ascertaining their views. Hand and child size puppets, 'talk and draw', 'marla' (Irish for plasticine and play-dough), and developmental movement programmes were incorporated in the research as expressive formats, and adapted to children's strengths and interests during the phases of the research. Specific application of these methodologies will be the focus of the following sections of the paper.

Check Point for Reflection: Consider this Scenario

An Introduction to Alex

At the time of the study Alex, a 5-year-old boy with autism and severe social and communication impairments lived at home with his parents in the West of Ireland.

Prior to his diagnosis, Alex had brief, negative experiences attending a local preschool and mainstream primary school and had been withdrawn from both. Following the diagnosis, Alex attended an Early Intervention Unit for children with autism also known as a special class. During phase 2 of the research project, Alex transitioned from this Early Intervention Unit to the adjacent mainstream school which shared the same campus. His transition was not without difficulties but support from the local Multi-Disciplinary Early Intervention Team facilitated mainstream teachers' and classroom personnel's knowledge and understanding of how to support Alex appropriately. Initially, as part of the Unit's Transition Programme, '*First Steps'*, Alex attended the mainstream Senior Infant classroom for brief periods of Maths, PE, Art and English. Alex was supported by Julie, his Special Needs Assistant (SNA). The researcher was concerned with Alex's social engagement (particularly social engagement with other children). Conceptual resources were drawn from Stern (1985, 2010), Trevarthen (1998), De Jaegher (2013) and Rochat, Passos-Ferreira and Salem, (2009) and the focus was on how to support Alex's primary intersubjectivity and encourage secondary and tertiary intersubjectivity.

The following section is a sample of a field note describing early meetings between the researcher and Alex.

Alex

> *From the day of our first meeting, Alex appeared to have different ways of knowing and interacting with the world around him. Alex avoided eye contact and did not socially reference others. He appeared to be predominantly object-related. Observation focused on kinesics (body language and orientation), proximity to others, features of emerging communication and haptic (touch) interaction. Alex did not display referential communication, which frequently accompanies symbolic development. He failed to show communicative gestures that might become the sign of something else (e.g., he didn't point or share with others). His level of communication had not transcended the emotional co-regulation and affective attunement that characterises early face-to-face, proto-conversational exchanges (i.e. primary inter-subjectivity) (Rochat, Passos-Ferreira and Salem, 2009), however he showed early precocious ability with Maths and literacy. He did not display 'a sense of interesting otherness of the world… (Alvarez and Reid, 2013, p.52). His ease in a world of inanimate objects was challenging in a multi-grade classroom of approx. thirty children. At the beginning of his transition to the mainstream classroom, during phase 1, Alex for the most part showed distress and discomfort. He seemed unaware of the children.*

Why we need to consider bodies and embodiment

Julie (SNA) attributed Alex's behaviour differences as constitutive of agency and desire. Understanding Alex's body narrative was key to distinguishing a mind body dualism but also addressing his need for embodiment as a primary modality of learning and being. Embodiment is defined in this article as the simultaneous intentional and mindful engagement of the self with the internal and external environments (Munro, 2018). This article proposes the concept of embodied learning as a pedagogy suitable for children with autism, to encourage the connection of body mind activities at different levels of intersubjectivity.

Julie was adept in her classroom adaptations to accommodate Alex's sensory processing and integration difficulties, addressing the challenge of developmental difference with energy and confidence, drawing on Intensive Interaction (Nind and Hewett, 1994; 2001) and Floor time techniques (Greenspan and Wieder, 1998) as recommended by the first researcher. Under the Occupational Therapist's advisement, Julie created a sensory environment through the use of sensory toys, a therapeutic seat support as well as indoor and outdoor therapeutic equipment (Ayres, 1972). She was aware, however, that in the absence of sustained professional input, these initial sensory integration challenges could lead to further developmental obstacles in creating a meaningful social connection between Alex and other children. Nonetheless, Julie encouraged peers from the school's 'Buddy group' to incorporate the 'sensory diet' recommended by the OT into the day to day life of the classroom. The class teacher engaged directly with the OT and incorporated his strategies; allowing time for sensory breaks and 'sensory snacks' each day. The researcher suggested that when Julie felt Alex's sensory needs were addressed, she could slowly introduce one peer into early socially focussed games in the school yard and at lunch break. Julie also encouraged Alex's awareness of self through music and body awareness activities. The researcher advised Julie that this provided an opportunity for peer integration.

Alex particularly craved bodily sensations; his awareness of body position appeared disconnected. Movement in space and time was therapeutic for him. Jumping on a trampoline served as both reward and stimulus for learning. Differences in Alex's proprioceptive and vestibular systems could account for this need for movement. His proprioceptive system seemed disengaged; he was unaware of where his body was positioned in space and time. He did not appear to receive reliable information from his joints or muscles. His vestibular system did not account for unpredictable movement. Because information from these systems was poorly integrated, Alex experienced difficulties with bodily

awareness, attention, sequencing and motor planning (Miller and Fuller, 2006). He displayed tactile defensiveness; poor body awareness and coordination and experienced fear when challenged by sensory motor activities. Given that the education environment presents many sensorial demands on a child, sensory integration techniques were added to Alex's daily programme and his 'sensory snacks', were incorporated into the curriculum by his teacher, Daniel. On the OT's advice, Daniel incorporated these techniques into his teaching and prioritised them in Alex's IEP. During the researcher's early visits, Alex responded well to the body awareness programme and the sensory diet recommended by the OT which was incorporated into Alex's class routine. He had a calm demeanour entering the classroom, he was more physiologically and emotionally regulated as well as becoming more responsive to Julie's suggestions.

Checkpoint for Reflection
The importance of the skilled and competent adult when engaging with young children with autism is evident when we consider Julie's ability to attune to Alex. Julie engaged in naturalistic interactions, adapting and structuring teacher instructions visually in her response to Alex's communication needs. If Alex was overwhelmed by sensory stimuli, she supported him by using sensory toys and the sensory diet recommended by the Early Intervention team, particularly the OT. She co-regulated him and used simple gesturing, Irish Sign Language, visual supports, Picture Exchange Communication System (PECS) by Bondy and Frost, (1994; 2001) to calm and guide his actions. She engaged affectively with him; gently acknowledging and validating his emotions, reducing her language and demonstrating responsiveness in an attempt to co-regulate him. When self-regulation or co-regulation didn't occur, Alex became dysregulated. Sensory strategies helped Alex's ability to self-regulate but sometimes he required the support from an adult (Belford, 2012; Brown, 2015; Fogel, and Garvey, 2007). This was achieved through his sensory diet; individualised to meet his needs. Julie also focused on stabilising primary intersubjectivity as an innate emotional foundation (Schore, 2001); what was now mediated would eventually be internalised. She used her body as an instrument of affective education; within a context of facial expressions, posture, tone of voice, rhythm and tempo of movement and action, she modelled calm, responsive and mindful techniques, reducing stimuli and supporting Alex's sensory integration needs. She continued to address Alex's sensory dysregulation (DeGangi et al, 2000) while simulating the neurobiology of a secure attachment, providing psychobiological regulation and preparing him for change and unpredictability in his environment. The following section will generalise some of this learning to the mainstream inclusive environments for other children with autism.

What do we know about how teachers include children with Autism in the mainstream classroom?

Including a child with autism requires that teachers are knowledgeable about how to support the child's individual needs, but also that they are knowledgeable of inclusive pedagogies and adept at inclusive classroom strategies supporting all children in the group.

During one of the early visits to Alex's large classroom, it was noted by the researcher that while Alex's class teacher conducted a lively classroom debate; peers didn't include Alex or encourage him to participate. They didn't smile at him, nudge him, or link back with him. Their attempts at social referencing had previously been unsuccessful. They were unaware of his body position or gaze orientation, unable to draw him in. Alex's kinesic signals of remoteness were unattended to and resulted in detachment, exacerbating his status of social isolate.

Checkpoint: Consider this scenario

Meanwhile, Alex's transition to the younger Junior Infant Art class was transformational. Alex spent time with both same age peers in the Senior Infant classroom but was frequently a visitor to the Junior Infant class group during the transition period. When Alex entered the Junior classroom, he was a child amongst children. There were no social negotiations needed, Alex walked independently towards his seat, embodying a more confident and participatory role, where less attention was afforded to the structured workings of the curriculum and more of an emphasis on play and creativity. In this classroom Alex had more subjective agency reflecting a rights-based approach to classroom attendance and engagement; his diagnosis clearly not a marker of difference. The Junior Infant classroom teacher welcomed Alex immediately gesturing to him towards the Art corner, as he entered the classroom. As a teacher, she excelled at Art but also incorporated inclusion as an artistic and creative endeavour. This checkpoint elicits several questions. Did younger peers engage with Alex in less complex social interaction? Was their movement and playfulness the vehicle that Alex needed to participate more easily? Was the teacher less focused on a deficit orientation and more facilitating of the Creative Arts? It appeared that the children occupied the same space as Alex, as co-creators and designers of an inclusive art experience, evidencing less emphasis on complex social nuances.

Field Notes

The following section is a sample of a field note describing later observations of the intervention including Alex.

During an intervention using child and hand-size puppets, Alex appeared more engaged and more interested in joining the group activity during later phases of the research. The puppets entered children's play as casual observers, occasionally commenting and offering opinions. More frequently puppets asked questions and children were invited to give their view on topics that were important to them. Alex found social interaction generally difficult, but he showed interest in the puppet when the puppet began to imitate him.

Following the puppet intervention, on entering the Junior Infant classroom, Alex and a peer joined the other children who were working with clay (a welcome sensory component). Alex's expression through this medium was excellently facilitated by a confident and competent teacher – Miss Brown. Using simple, specific directions, the teacher modelled the activity and included a peer (Rosie, a bubbly 5-year-old) whenever possible. Miss Brown focused on the process not the product while gently reinforcing his efforts. Alex gained confidence and frequently glanced at Rosie. Alex's beautiful creation saw dinosaurs coming to life in his hands. Alex, who was predominantly non-verbal, mimicked these animals talking to each other. His vocalisations were heard by the other children who were keen to observe his dinosaurs and the interaction between them. Alex worked slowly and methodically without inhibition. His demeanour was happy and free. He responded positively to Rosie's gentle verbal direction, and while some sensory integration issues relating to classroom noise were apparent; he displayed excellent fine motor ability to manipulate and form. His engagement with the clay dominated, however Alex also showed evidence of cooperative play; briefly socially referencing Rosie, when she pointed to the clay dinosaurs in Alex's hand and called the teacher to look at them. Alex used dinosaurs to enter other children's worlds, and attempted to initiate some level of role play between the dinosaurs while adopting the social nuances of the group.

During each research visit, the researcher provided a creative arts toolbox to encourage Alex's engagement. Alex's levels of social engagement increased during the research; he became a more competent peer amongst children. The phases of research identified with phases of Alex's engagement and levels of intersubjectivity. Phase 1 indicated primary intersubjectivity with no level of engagement with peers. Alex only engaged with the researcher or teacher or an object. He was mostly involved in parallel play. Phases 2 and 3 were concerned with elements of secondary intersubjectivity, where Alex showed the beginnings of joint attention with reference to objects and became engaged in triadic intentional communication with others about objects. Phase 4 was associated with

tertiary intersubjectivity. Alex participated in joint pretence with Junior Infant children; displaying the ability to generate meta representations through pretence, where dinosaurs represented actual real ones and Alex jointly engaged in social connectedness through communicative meaning making with other children.

Table 2. Phases of Research and Levels of Intersubjectivity

Child	Alex	Level of intersubjectivity
Phase 1	Objects of Reference	Primary Intersubjectivity
Phase 2	Objects of Reference/PECS/ Irish Sign Language, Music and Movement/Puppets	Primary Intersubjectivity and Secondary Intersubjectivity
Phase 3	Objects of Reference/ PECS/ Irish Sign Language Music and Movement/ Puppets	Primary Intersubjectivity and Secondary Intersubjectivity
Phase 4	Objects of Reference/ PECS/ Music and Movement/ Puppets	Secondary Intersubjectivity and tertiary intersubjectivity

IN CONCLUSION

Lessons learned from children's experiences include the importance of engagement and the significant role of the creative arts when working with young children with autism. In this research children's views on being included, belonging and playing were frequently sought by puppets during the phases of the research. While the class group responded optimally to puppet interventions, for one child, the use of playdoh was more significant. The use of creative methods may inform practitioners, parents and researchers about the importance of engagement.

For children with disabilities a deeper concern lies in the absence of audible or vocally expressed voice; how do children make their needs known? This research project affirms the role of enactive phenomenology (De Jaegher, 2013), and intersubjectivity (Fuchs and De Jaegher, 2009) in relation to nuanced presentations of voice. Children may respond to the arts when they encounter difficulties with spoken language. The language children have for their bodies can adequately explain or give voice to thoughts, feelings and intentions. It is important that parents, caregivers and teachers understand that language and communication systems that are represented by the body may be misconstrued if children remain emotionally and sensorially dysregulated and are not engaged. The challenge is to

facilitate regulation prior to engagement and recognise the presence of children's pre-verbal 'intentional' behaviour.

This reaffirms the interconnections between mind and body. For children who may have difficulty with spoken voice, more specific research needs to investigate phenomenological relationships between how they experience the world and how they express themselves. Using the creative arts and movement may encourage engagement at different levels of intersubjectivity. If the movement of a child with autism embodies emotions, needs and desires, parents, teachers and caregivers need to know it.

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