

Artistic Research and Development Project at InnerSense in  
Collaboration with Sounds of Intent

Report  
11.08.2014

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## Introduction

The following is a final report of a six-month collaboration between InnerSense and the *Sounds of Intent* project based at the University of Roehampton. Three aims of the project were to:

1. Evaluate and inform practice of multisensory theatre workshops for people with learning difficulties
2. Assess the impact of the work on participants
3. Review and develop the multisensory component of the *Sounds of Intent* framework of musical development

## Background

### *InnerSense*

InnerSense is an arts charity providing multisensory, cross-arts workshops for children and adults with Profound and Multiple Learning Difficulties (PMLD), Severe Learning Difficulties (SLD) and autism. Since 2006 the organisation has developed a rolling programme of workshops, transforming a bespoke performance studio into a new theatrical environment each week of term, filled with different props, instruments, costumes, characters and sets. Within these environments immersive theatre is created with around 100 disabled participants aged between 5–70 and their carers every week.

### *Sounds of Intent*

*Sounds of Intent* is a project that began in 2001, and aims to promote musical engagement in and musical activities for children and young people with learning difficulties. At its core is a framework of musical development based on extensive research (Ockelford, 2000; Ockelford, Welch, Zimmerman & Himonides, 2005; Ockelford, 2008; Welch, Ockelford, Carter, Zimmerman & Himonides, 2009; Vogiatzoglou, Ockelford, Welch & Himonides, 2011). The framework forms part of freely available website used by practitioners to assess musical development and

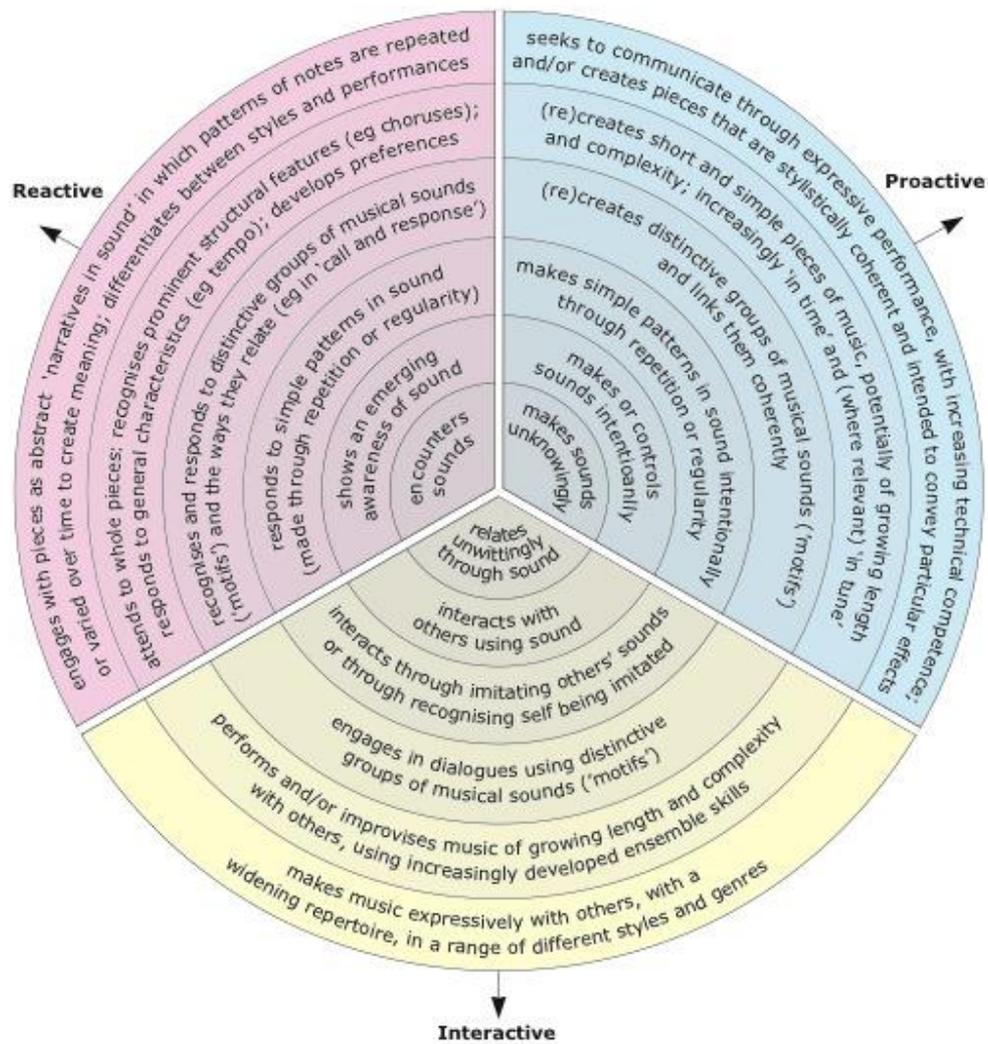
contains downloadable resources to promote musical engagement. In the period from February 2012 to July 2014, the *Sounds of Intent* website had over 3,000,000 unique hits, with almost 500,000 downloads of material and is being used in around 20% of special schools for children with learning difficulties in England. At the time of writing, there are 467 registered practitioners, 142 active schools and 92 freelance practitioners (i.e. recording session data). One thousand nine hundred and ninety individual pupils have been assessed thus far, and 4,954 session forms have been completed.

The *Sounds of Intent* framework of musical development covers a wide range of musical abilities from those who may show limited or seemingly no engagement, to those who demonstrate exceptional musical abilities. The framework spans six levels of musical development, which correspond to core perceptual and cognitive abilities within each of three domains (Table 1). These domains are labelled ‘reactive’ (how one responds to sound and music), ‘proactive’ (how one creates sound and music on his/her own) and ‘interactive’ (how one creates sound and music in the context of others). See Figure 1.

Table 1: The six levels of musical development and their corresponding core perceptual/cognitive abilities

Level	Description	Acronym	Core perceptual / cognitive ability
1	Confusion and Chaos	C	None: no awareness of sound as a perceptual entity
2	Awareness and Intentionality	I	An emerging awareness of sound as a perceptual entity and of the variety that is possible within the domain of sound (in the perceived present)
3	Relationships, Repetition, Regularity	R	A growing awareness of the possibility and significance of relationships between the basic aspects of sounds – particularly repetition (involving working memory)
4	Notes forming Clusters	C	An evolving perception of groups of sounds, and the relationships that may exist between them (Gestalt perception, involving long-term veridical memory)
5	Deeper Structural Links	L	A growing recognition of whole pieces, and the frameworks of pitch and time that lie behind them (involving long-term schematic memory)
6	Mature Artistic Expression	E	A growing awareness of the culturally determined ‘emotional syntax’ of performance that articulates the ‘narrative metaphor’ of pieces (involving long-term schematic memory)

Figure 1 *Sounds of Intent* framework of musical development



Each of the six levels of the framework contains four descriptors or elements (labelled A, B, C, D) detailing what musical engagement might look like. It is here, within elements D of levels one and two, that the multisensory component of the framework lies.

Table 2: Elements for Levels 1 and 2 of the framework. Multisensory components are highlighted in elements D.

	Level 1			Level 2		
	Reactive	Proactive	Interactive	Reactive	Proactive	Interactive
A	Is exposed to a rich variety of sounds	The sounds made by life processes are enhanced and/or involuntary movements are used to make or control sounds	Practitioners seek to stimulate inter-action by prompting with sounds and responding empathetically to any sounds that are made	Shows an awareness of sounds – potentially of an increasing variety	Makes sounds intentionally, potentially through an increasing variety of means and with greater range and control	Sounds made by another stimulate a response in sound
B	Is exposed to a wide range of music	Sounds are made or controlled through co-active movements	Co-workers model interaction through sound	Makes differentiated responses to the qualities' of sounds that differ (e.g. loud/quiet) and/or change (e.g. get louder)	Expresses feelings through sound	Sounds are made to stimulate a response in sound by another
C	Is exposed to music in different contexts	Activities to promote sound production and/or control occur in a range of contexts	Activity to promote interaction through sound occurs in a range of contexts	Responds to musical sounds increasingly independently of context	Produces sounds intentionally in a range of contexts	Interactions occur increasingly independently of context
D	Is exposed to music and musical sounds that are systematically linked to other sensory input	Some activities to promote sound production and/or control are multisensory in nature	Some activities to promote interaction through sound are multisensory in nature	Responds to musical sounds responds to musical sounds linked to other sensory input	Produces sounds as part of multisensory activity	Interaction through sound involved activity that engages the other senses too

The question arose as to whether these four multisensory components might be expanded. Could a new multisensory framework be devised to assess engagement, not only within the sense of hearing but also within the realms of sight, touch, and movement? InnerSense provide a unique arena for this project as their multisensory theatre workshops culminate in using all the senses within a range of art forms – for example music, visual art, drama and dance. While being involved in the development of the framework the process has also been used to review and inform the organisation's practice and explore the impact of work on participants.

## InnerSense / *Sounds of Intent* Project – first steps

In January 2014 an initial three-week pilot took place. Two workshops per week (one group with children and young people and one with adults) were observed and filmed within the pilot. A meeting was held in which observations were reviewed and analysis and practice were discussed. Results of the meeting were to:

1. Focus observations on four participants (two from each group) due to the scope and timeline available.
2. Choose participants who fit the profile of levels 1–3 (of 6) of the *Sounds of Intent* framework of musical development
3. Film weekly sessions over two terms. The video would be analysed to assess responses within the multisensory context.
4. Draft a preliminary multisensory version of the *Sounds of Intent* framework to include the senses of hearing, sight, vision and movement.

### Aim 1: Evaluating and informing practice

The initial meeting mentioned above and a subsequent three further meetings were held in which practitioners reviewed video observations and evaluated practice. Topics discussed included: customising the workshops to the wide range of abilities present within each session, scaffolding development, and suggestions for practice to be trialled.

#### *Evaluating Practice – varying levels of ability and supporting the individual*

Within each InnerSense workshop there is a wide range of abilities in the participants who attend. There are those who are seemingly unaware of the larger narrative, who may be engaging with sounds and objects at a sensory level, for example responding to the tactile feel of a soft puppet rather than understanding its symbolism and characterisation. Other participants show the ability to engage more obviously within the varying art forms, playing symbolically, demonstrating musical and artistic skill (according to Western standards of practice). Further participants lie between these two examples; in a sense the full range of the *Sounds of Intent* framework can be observed. Sessions are fully inclusive. The practitioners consider the participants'

varying levels of ability within the groups that attend each session, layering workshops to try and to the unique needs and strengths that are presented. One way this is accomplished is through supporting and scaffolding participants' engagement and development.

### *Evaluating Practice – Scaffolding*

Within observations, practitioners use activities and interaction to scaffold participants' engagement and development. As InnerSense is an organisation that provides training for staff working in the field of special needs, such as care staff and teaching staff, these scaffolding skills provide a set of valuable techniques that can be transferred to contexts beyond the workshops. The four selected participants were each non-verbal, demonstrating varying communication needs and abilities. The following were observed:

- There were opportunities for interaction with others through the mediums of sound/music, movement/dance, and through different forms of play, including role-play and puppetry.
- The multisensory environments were sufficiently varied so that there was always an area available where participants could observe 'safely', before seeking to engage in the activities on offer.
- This micro-environments also offered a familiar space of lower arousal to which participants could move if they felt overwhelmed.
- Practitioners offer a range of previously identified instruments and objects within sessions to allow participants to explore a wide variety of different textures and sounds.
- Vocalisation was used to encourage interaction with others, for example, through the imitation of sounds, call and response, and the use of a microphone to enhance participants' vocal contributions.
- Movement and dance were used to encourage engagement with others. This movement was often supported by music, for example, to provide a rhythmic framework.

- Participants' preferences, learned by practitioners over time, were incorporated into sessions to encourage engagement (i.e. preference for particular sounds/objects/activities).
- Practitioners were sensitive to participants' preferred behaviours, acknowledging them, and gently guiding what was offered towards engagement and/or interaction with others.

### *Evaluating Practice – Suggestions*

Upon reviewing observations of work, it was decided:

1. To ensure the level of narrative within sessions permits sufficient differentiation (for example, by taking into account sensory schemas) to meet participants' varying levels of symbolic understanding.
2. To evaluate the purpose and function of music (diegetic and non-diegetic) used throughout sessions.
3. To trial periods within sessions without music to help determine if there is a difference observed in responses when music is taken out of the experience.
4. To carry over session material into identified participants' schools to be monitored by teachers and evaluate if responses are dependent upon context.
5. To analyse participants' responses in relation to a preliminary draft of the multisensory *Sounds of Intent* framework

As well as the above, discussion took place after sessions, exploring practice, participants' responses and the *Sounds of Intent* framework, further exemplifying on-going evaluation and reflection by practitioners.

**Aim 2: Assessing the impact of work on participants.**

There are challenges in assessing the impact of simultaneous elements (involving hearing, sight, movement and touch) within the multisensory theatre environment on participants' engagement. Within this layered context it can be difficult to determine what element or combination of elements is having an impact on participants. A key

element is the part that practitioner's play in scaffolding and interpreting the environment for participants, and this can be hard to evaluate precisely, as it occurs 'in the moment'. One aim of InnerSense's work is to use combinations of senses simultaneously to support and encourage engagement and development. Systematically paring down the experience may provide a route to understanding whether it is indeed the combination of elements that has an impact, or if a participant engages with one sense more than others. For example, if music is taken out of a session, will the participant's response be the same or will this provide evidence that music does have a vital role in combination with other elements? This was trialled periodically but was not fully investigated within the scope of the current project. It may be taken into account for the design of sessions in future research.

Although the work comes with the challenges mentioned above, participants' engagement with varying senses and mediums were noted. In terms of impact, there are few opportunities for those with learning difficulties to take part in interactive theatrical experiences. Merely providing an arena for participation is therefore a good thing. The multisensory context offers an arena for participants to show where their varying aesthetic propensities lie and to have these supported, whether that be in terms of hearing/sound/music, movement/dance, play/drama, or visual art. This project provides an important starting point from which to develop the *Sounds of Intent* framework into the field of sensory integration.

### *Observations*

Weekly observations were made over two terms with a focus on four participants. Repeated observations helped to determine if responses seen were by chance or were intentional. Because of the structure of the workshops, which take place once a week over three terms, and with the same participants often attending from year to year, it is a unique place to observe longitudinal change (or, indeed, stasis). Within this project a total of twenty workshops was observed. The video data that have been gathered will be used in the development of the multisensory version of the *Sounds of Intent* framework. The online resource of the original *Sounds of Intent* framework is designed so that practitioners can chart the type and number of musical behaviours seen over time, allowing for results of even the smallest steps in development to be

measured. When completed, the multisensory framework will be used in the same way. In the current stage of the project, the observations provide a preliminary profile of participants, offering information on where their strengths and needs lie within the different sensory domains and through the use of different mediums.

Tables 3 and 4 demonstrate a few of the observations taken for two participants, R and J. A brief description of the session, a brief analysis of the observation, its corresponding level within *Sounds of Intent* and the senses that are deemed central to the observation are included. In summary, focusing on R, the observations below tend towards Levels 3 and 4 of the preliminary version of the multisensory *Sounds of Intent* framework. R creates patterns through sound, visually and through movement. He enjoys spinning, a preferred behaviour that is often observed but also scaffolded and transformed into social interactions. R appears to react to characters and puppets at a level that suggests he may understand them symbolically, but not necessarily as the characters within the narrative (i.e. understanding the puppet as an animal or mouse but not perhaps as Trubloff the mouse within the storyline of the children's book). This is interpreted within Level 4 of the framework.

J also enjoys making patterns, and was observed to do so vocally over many sessions and when she played instruments (mostly percussive though also when playing the theremin) (SoI Level 3). Her response to characters and puppets differs to R's mentioned above. She shows awareness, localising visually, sometimes reaching out to touch (SoI Level 2). However, objectively it cannot be determined whether she is responding to these elements of the session with a level of symbolic understanding or whether she perceives and responds to them as concrete objects. It may be that further observations in other contexts would shed light on this: her responses with similar experiences at home and at school for example.

Table 3: Observations				
R				
Workshop	Observation	Analysis	Sounds of Intent Domain and Level	Main Senses involved
Under the Umbrella Tree	The room is darkly lit. A black umbrella is on the floor upside down and is filled with different coloured lights. Robbie spins the umbrella so that the lights create a pattern in the dark. He watches the spinning colours, sometime reaching out towards them as they spin.	R creates pattern with light here through his regular spinning of the object. R enjoys spinning things – it is a characteristic movement observed from session to session. His creation of pattern appears intentional and he demonstrates pattern in other observations focusing on his musical playing as well.	Proactive Level 3	Sight Movement
Trubloff	As in the previous week's session, R is presented with a puppet of Trubloff the mouse. Initially lying down, facing away from the puppet, R is drawn in. Sitting up he begins to react to the mouse. He focuses and looks directly into its face, he reaches out and gives the mouse his hands. The mouse moves to the musical accompaniment. When the mouse pets R's hand he smiles and initiates reaching out towards it repeatedly. He is fully engaged with the puppet for a number of minutes, not paying attention to Jan who is presenting Trubloff.	Along with observations from the previous week it is suggested that R is responding/interacting with the puppet at a more symbolic level as something animate. It cannot be determined that R is interacting with the mouse as 'Trubloff' within the narrative of the story that is presented however, which would require a greater level of abstraction, symbolism and understanding of narrative.	Interactive Level 4	Sight Touch Movement (of the mouse)
The Round Table	R walks in a circle over and over, following the pattern of the parachute that is laid on the floor, perhaps also copying the others that are walking too. Coloured lights from the ceiling reflected on the parachute accentuate its circular aspect.	This may be interpreted as an example of R displaying pattern through movement, walking round and round the parachute. The looped music in the background perhaps supports the circular theme and movement but again, it is difficult to tell in this observation whether R understands this or whether the music creates an atmosphere rather than a representation of movement for him. The larger narrative here is the 'Knights of the Round Table'. R appears to enjoy the schema of circles and spinning included by the practitioners, rather than understanding the whole picture within the story.	Proactive Level 3	Movement Sight (pattern of the parachute)
Nessie	R plays the drum, creating patterns and pausing for Jamie (the practitioner) to respond in between. Jamie copies the patterns R plays within this interaction of turn taking.	Another observation of R's drum playing, again demonstrating his enjoyment of being copied and also perhaps showing his move from playing patterns to 'groups', 'chunks' of sound. Also to note within this clip, the difference between the clear imitation demonstrated by R within his interaction with Jamie and perhaps a general sense of copying and being copied between R and Jamie. R does not imitate the direct patterns that he hears but creates patterns or groups of sounds to be imitated by others.	Interactive Level 3	Sound Touch

Table 4: Observations

J				
Workshop	Observation	Analysis	Sounds of Intent Domain and Level	Main Senses involved
Snow Queen	Jan encourages interaction with J through the use of a puppet representing a snow queen. The puppet consists of a white, faceless head and long veil. J shows some response to the puppet in her localising and looking towards it when it is presented. Within the workshop, flute music plays in the background during this time, though it is not clear the impact that this has on J.	J appears to be aware of the puppet through her localisation but does not appear to respond in any particular way. In other observations her response is often the same, she may localise, sometimes reaching out to touch the puppet, her response being interpreted here in treating the puppet more as an object rather than as the character/animal it represents. It is unclear what the music holds for her within this observation.	Reactive Level 2	Sight
	J is seated next to the theremin. She is tapping her hand on the tray of her wheelchair rhythmically, which creates a steady pattern on the instrument. At one point Harry demonstrates playing the instrument, moving his hand towards the theremin to create sound and J watches. She then copies Harry and moves her hand again, this time watching the instrument as she plays. Her movement is not as fixed and repetitive as previously; the playing appears more intentional.	When Jasmine first taps the tray this is a regular behaviour she often exhibits, a repetitive physical movement not necessarily interpreted with the intention of creating patterned sound. The quality of her movement changes after Harry plays as described, perhaps demonstrating a move into intentionality, which she has been seen to demonstrate in other sessions, with the use of instruments and vocally.	Interactive Level 2	Sound Movement
Nessie	Within the workshop's greeting J enjoys vocal play with Jan, creating different patterns to be copied.	There are repeated observations of J vocalising. She often enjoys having her sounds repeated in interactions of some length, often growing excited as they continue. She appears to have a bank of favoured patterns and sounds that she uses. In this interaction there is the visual aspect of Jan's animated facial expression and movement, which may contribute to J's engagement throughout.	Interactive Level 3	Sound Sight

Overall, drawing on the senses of hearing, sight, movement and touch, InnerSense provides participants with opportunities to interact with others, to be creative using varying art forms as independently as possible (music, mark making/drawing, dance, drama/play) and to be a spectator and respond to the activities that are presented. Understanding the impact of the work is complex when presented with a multi-layered set of variables that take place within one session. Therefore, this project is a critical step in finding a way to assess such experiences and more thoroughly investigate the impact on participants using a multisensory framework grounded in theory. This is not only applicable to InnerSense but has the possibility to impact on a wider scale as it applies to the many schools that incorporate multisensory work in their practice.

**Aim 3: Review and develop the multisensory component of the *Sounds of Intent* framework of musical development.**

The expansion of the *Sounds of Intent* framework of musical development into other multisensory domains directly feeds into exploring how one can gauge the impact of multisensory work on participants. A preliminary version of a *Sounds of Intent* multisensory framework has been drafted. Observations have been used to inform the framework and in turn the framework has been used to discuss methods of evaluating participants engagement and progress. At this stage the framework will focus on three or four levels of development looking at how participants engage through the senses of hearing, sight, movement and touch, reaching the point where an understanding of symbolism in the arts begins. The levels of development follow the core cognitive perceptual/cognitive abilities of the original framework (see Tables 1 and 5). Here we also look at the development of symbolic understanding, as this comes into play within symbolism and narratives that are presented in the arts and observed in the current project.

Table 5: Levels of development in other sensory domains in relation to core perceptual/cognitive abilities and symbolic understanding. The current project focuses on Levels 1–4 highlighted here.

Level	Description	Acronym	Core perceptual / cognitive ability	Symbolic understanding
1	Confusion and Chaos	<b>C</b>	None: no perceptual awareness in any sensory domain	–
2	Awareness and Intentionality	<b>I</b>	An emerging awareness of the perceived aspects of things and of the variety that is possible within each, experienced within the perceived present; a sense of agency, of intentionality	No symbolic understanding
3	Relationships, Repetition, Regularity	<b>R</b>	A growing awareness of how one perspective value may relate to another; a sense that one may replicate another	Early symbolic understanding – that one thing can represent another through imitation of one or more of its qualities
4	Notes forming Clusters	<b>C</b>	The evolving notion of groups of perspective values as units of perception and meaning, and of the relationships that are possible between ‘chunks’, involving ‘Gestalt perception’	More advanced symbolic understanding, through association (the imitation of a relationship between two dissimilar things, such as a word and a concept)
5	Deeper Structural Links	<b>L</b>	A growing understanding and appreciation of complete works of art, and the conventions of structure and content that underpin them	The first notion of a symbolic narrative over time
6	Mature Artistic Expression	<b>E</b>	A growing awareness of the impact of artistic production on others; an evolving appreciation of culturally determined aesthetic values and the expressive nature of art – the ‘narrative metaphor’ that unfolds as works of art are perceived	Awareness of the impact of a symbolic narrative on others within a known culture

The preliminary design introduces each sense within an independent framework. These individual frameworks will then be presented in tandem to demonstrate how they work together within multisensory experiences. The following tables demonstrate the text for the preliminary frameworks for sight, touch and movement. As in the original framework three domains of engagement are included. These are reactive (how one responds to the four main senses), proactive (how one uses varying mediums to create on their own) and interactive (how one uses varying mediums in the context of interaction with others). The graphic representation is underway and is being planned to follow the circular design of the original framework, while also representing that the senses work together.

Table 5 Preliminary Framework – Sight

Genre		Sight					
Domain		Reactive		Proactive		Interactive	
Level 1	C	Encounters things that could potentially be seen		Unknowingly does things that others see		Relates unwittingly through vision	
Level 2	I	Shows an emerging awareness of visual images		Deliberately does things for others to see (e.g., scribbles on paper, moulds clay)		Interacts with others using vision (e.g., makes eye contact)	
Level 3	R	Is aware of simple visual patterns (e.g., repeated blobs of colour) [the beginnings of abstract art]	Is aware of imitation of simple features of an object in a representation of it (e.g., colour, shape) [the beginnings of representational art]	Creates simple patterns (e.g., repeated blobs of colour, straight(is) lines)	Copies simple features of things (e.g., blob of appropriate colour for tree, circle for face)	Engages with another to create simple visual patterns (through imitation)	Engages with another to imitate simple visual features of things
Level 4	C	<b>Gestalt perception</b> – individual features of things are perceived together to form ‘wholes’					
		Perceives whole abstract shapes	Perceives entire objects as such (eg, puppets)	Creates whole abstract images made up of separate elements	Creates entire images of objects and can complete ‘teapot with parts missing’ puzzle and the like	Engages with another to create simple abstract visual wholes from parts	Engages with another to create simple representational visual wholes from parts

Table 6 Preliminary Framework – Touch

Genre		Touch					
Domain		Reactive		Proactive		Interactive	
Level 1	C	Encounters touch by others / is unaware of various textures and shapes into which he/she comes into contact		Unwittingly comes in contact with objects/people using touch		Relates unwittingly through touch	
Level 2	I	Shows an emerging awareness of being touched / of various textures that are encountered – either through others bringing items into contact or through exploration		Deliberately makes shapes / textures (eg in clay or plasticine)		Interacts with others using touch	
Level 3	R	Is aware of simple patterns perceived through touch	Is aware of imitation of simple features of an object in a tactile/haptic representation of it	Creates simple patterns using tactile mediums (e.g., clay)	Copies simple features of things	Engages with another to create simple visual patterns (through imitation)	Engages with another to imitate simple visual features of things
Level 4	C	<b>Gestalt perception</b> – individual features of things are perceived together to form ‘wholes’					
		Perceives shapes and textures, eg dots forming line; approximate shapes become ‘corrected’ in memory	Perceives entire objects as such through touch	Creates whole abstract shapes made up of separate elements (through clay, for example)	Creates entire objects through touch (eg, a face in clay)	Engages with another to create abstract objects through touch	Engages with another to create simple representational wholes from parts in the domain of touch

Table 7 Preliminary Framework – Movement

Genre		Movement					
Domain		Reactive		Proactive		Interactive	
Level 1	C	Is unaware of being moved or of movement in the external environment (people, animals or things)		Makes movements unwittingly (including reflexes)		Relates unwittingly through movement	
Level 2	I	Is aware of being moved and movement in the external environment		Moves intentionally		Interacts with others using movement	
Level 3	R	Is aware of simple patterns of movement in people (eg, ‘to and fro’), and how these can emulate the movement of other people, animals or things		Creates simple patterns of movement intentionally (eg, rocking to and fro); can emulate simple patterns of movement of animals or things		Engages with others through imitating simple patterns of movement	
Level 4	C	Understands how individual movements can combine to form short dance sequences		Creates or re-creates short, coherent sequences of dance movements		Engages with another to create or re-create short coherent sequences of dance movements	

## Project Results and Wider Impact

This initial project is a starting point in understanding the impact of multisensory work with children and adults with learning difficulties. The following outcomes have been a result of the work:

- A preliminary multisensory framework that can be trialled for assessment in a variety of settings
- The promotion of multisensory work that is grounded in theory
- The project can be used to inform the design of future research in the area of multisensory work and those with learning difficulties.
- A pool of data has been collected which may also be used for further analysis.
- A collaborative book proposal involving the University of Roehampton and InnerSense is being developed, which will combine theory and practice.
- The project will also be used to inform write up for submission to academic journals.

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