The intensive Interaction Institute

Intensive Interaction: The Published Research Summaries Document 2026

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(Last updated in January 2026)

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Introduction

The 'observable' outcomes of Intensive Interaction

For over 30 years methodologically structured research into Intensive Interaction has routinely evidenced a number of common socially beneficial outcomes. These common outcomes evidence increased or novel socially interactive responsiveness on the part of the recipients i.e. children and adults with communication difficulties and differences; with such recipients most often being those with learning disabilities and/or autism (although some studies have focused on the use of the approach with older adults with late-stage dementia e.g. Harris & Wolverson, 2014).

Listed below are the most common observable and therefore directly measurable interactive outcomes associated with the use of Intensive Interaction with both children and adults with communication difficulties and differences, as compared to initial/baseline measures:

- **Increased social anticipation, initiation and/or engagement by the recipient participant**

  As evidenced in the following studies: Nind, 1996; Watson & Fisher, 1997; Kellett, 2000; Cameron & Bell, 2001; Kellett, 2003; Kellett, 2004; Forster & Taylor, 2006; Anderson, 2006; Barber, 2008; Samuel et al, 2008; Zeedyk et al, 2009a; Zeedyk et al, 2009b; Jones & Howley, 2010; Fraser, 2011; Argyropoulou & Papoudi, 2012; Harris & Wolverson, 2014; Rayner et al, 2014; Calveley, 2017; Karimi et al, 2019; McKim & Samuel, 2020; Mourière & Hewett, 2021; Glass et al, 2024.

- **Increased toleration of, or responsiveness to physical proximity by the recipient participant**

  As evidenced in the following studies: Nind, 1996; Firth et al, 2008; Zeedyk et al, 2009a; Zeedyk et al, 2009b; Fraser, 2011; Harris & Wolverson, 2014; Calveley, 2017; Berridge & Hutchinson, 2021.

- **Increased levels of contingent smiling by the recipient participant**

  As evidenced in the studies: Nind, 1996; Lovell et al, 1998; Leaning & Watson, 2006; Barber, 2008; Zeedyk et al, 2009a; Argyropoulou & Papoudi, 2012; Calveley, 2017; McKim & Samuel, 2020.

- **Increased levels of eye contact (or looking at another's face) by the recipient participant**

  As evidenced in the following studies: Watson & Knight, 1991; Nind, 1996; Lovell et al, 1998; Kellett, 2000; Kellett, 2004; Cameron & Bell, 2001; Kellett, 2003; Kellett, 2004; Kellett, 2005; Leaning & Watson, 2006; Forster & Taylor, 2006; Barber, 2008; Samuel et al, 2008; Zeedyk et al, 2009a; Zeedyk et al, 2009b; Fraser, 2011; Argyropoulou & Papoudi, 2012; Harris & Wolverson, 2014; Mourière & Scott-Roberts, 2017; McKim & Samuel, 2020; Berridge & Hutchinson, 2021; Mourière & Hewett, 2021.

- **Increased use of vocalisation by the recipient participant**

  As evidenced in the following studies: Watson & Knight, 1991; Lovell et al, 1998; Kellett, 2000; Elgie & Maguire, 2001; Cameron & Bell, 2001; Argyropoulou & Papoudi, 2012; Harris & Wolverson, 2014; Calveley, 2017; Mourière & Scott-Roberts, 2017; McKim & Samuel, 2020; Mourière & Hewett, 2021.

- **Increased levels of socially significant physical contact by the recipient participant**

  As evidenced in the following studies: Lovell et al, 1998; Kellett, 2000; Elgie & Maguire, 2001; Kellett, 2003; Kellett, 2004; Forster & Taylor, 2006; Firth et al, 2008; Barber, 2008; Samuel et al, 2008; Argyropoulou & Papoudi, 2012; Harris & Wolverson, 2014; Calveley, 2017; McKim & Samuel, 2020.

- **Improved levels of joint attention by the recipient participant**

  As evidenced in the following studies: Nind, 1996; Lovell et al, 1998; Kellett, 2000; Kellett, 2003; Kellett, 2004; Kellett, 2005; Leaning & Watson, 2006; Samuel et al, 2008; Mourière & Scott-Roberts, 2017; Mourière & Hewett, 2021; Glass et al, 2024.

Over 40 such research and review papers (published in peer-reviewed research or academic journals) have been summarised and included in this document. For clearer cataloguing, these summaries are organised by publication date and sectioned into research focused on: Part A) ***Research with Child Participants***; Part B) ***Research with Adult Participants***; and Part C) ***Other Significant Research***.

The evidenced rate of change in social interactivity associated with Intensive Interaction

These commonly evidenced 'interactive outcomes' (as listed above) found within Intensive Interaction research studies i.e. increases in, or the development of novel socially interactive responses, are seen to vary in how quickly, or more gradually, such changes are reported to occur.

The reported findings of increased or novel socially interactive responses by the recipient participants (across the body of Intensive Interaction research) appear to fall into two separate temporal aspects or timescales: one aspect seemingly quite rapid, the other relatively more gradual (but also seemingly more continuous) over a longer period.

It is interesting to note that some research evidencing gradual and more continuous improvements in interactive responsiveness was carried out over many months or across several academic terms (e.g. in research carried out with children in schools), whilst other studies capturing evidence of more rapid increases in sociability were conducted over much shorter periods e.g. across weeks, and in once instance even days (e.g. Lovell et al, summarised on p.23), more often with adult participants. And indeed, instances of sometimes very rapid changes in the levels of social engagement are often anecdotally related by practitioners using Intensive Interaction techniques with people (sometimes even for the very first time), particularly when employing the techniques of behavioural mirroring and/or vocal echoing.

As Firth (2008) describes in the paper '*The Dual Aspect Process Model of Intensive Interaction*' (summarised on p. 38), there appear to be two different but mutually co-dependant processes at work with Intensive Interaction: firstly there is one primarily focused on enacting a person-centred 'social inclusion' process (Firth, ibid) that is initially co-constructed with the recipient person, and subsequently, there is another more gradual process that is seen as a 'developmental aspect' that emerges cumulatively over the longer term, where novel or increased social understandings and capabilities continue to be further developed over a longer period of time.

In support of such a 'dual aspect process model' within the research body, empirical support for claims of such a rapid 'social inclusion' process comes from a number of the shorter-term research studies e.g. Lovell et al, 1998; Zeedyk et al, 2009a; Zeedyk et al, 2009b; Argyropoulou, & Papoudi, 2012; Harris & Wolverson, 2014. Indeed, in a study using 'micro-analytic analysis' of Intensive Interaction (Zeedyk et al, 2009b; summarised on p. 31), it was shown that for all the participants, Intensive Interaction was: '*… effective in promoted social engagement ... well before the end of the first full intervention session',* with some changes being seen to *'occur within minutes*'.

In addition to the potential for very rapid increases in social responsiveness seen over short timescales and attributable to the 'social inclusion' process enabled by Intensive Interaction, the sustained use of the approach over longer periods described as the 'developmental aspect' (Firth, ibid) is also strongly evidenced across a number of studies.

Such extended or systematic use of Intensive Interaction evidencing longer-term, cumulative developmental outcomes (of improved social understanding and engagement) is reported on in a number of papers included in this document e.g. Watson & Knight, 1991; Watson & Fisher, 1997; Nind, 1996; Kellett, 2000; Kellett, 2003; Kellett, 2004; Jones & Howley, 2010; Fraser, 2011; Calveley, 2017; Mourière & Scott-Roberts, 2017; Karimi et al, 2019; McKim & Samuel, 2020; Mourière & Hewett, 2021.

Part A: Research with Child Participants

An evaluation of Intensive Interactive teaching with pupils with very severe learning difficulties

Watson, J. & Knight, C. (1991)

Child Language Teaching and Therapy, 7 (3), 310-25.

This article describes an exploration of Intensive Interaction by staff at a school for pupils with severe learning difficulties, in Edinburgh. In this one-year study, the researchers attempted to analyse the skills used in infant-parent interaction and apply them to their educational situation via Intensive Interaction.

The Participants

Six pupils with severe learning difficulties were studied over the school year. They were chosen to represent a range of age and ability. Some pupils exhibited specific idiosyncratic behaviour related to their special needs, physical condition and history, which were not shown by others. Six members of staff consistently worked on interaction with a given pupil over this period of time.

The Method

Staff were asked to behave as naturally as possible, and to introduce a toy or object that they felt would be interesting to the child at some point when they felt it was appropriate to do so. The beginning of the session was signalled by taking off the pupils' shoes and leading them into the soft play area. The entire session was filmed, with the researcher holding the camera and trying to be as inconspicuous as possible. The only interruption was due to extraneous noises from other pupils in the class.

After each session staff completed an interaction recording form, this involving outlining the sequence of events, identifying the best and worst parts of the session and commenting on how they felt the session had gone. Additionally, summaries of each session and detailed descriptions made from short extracts of video.

Sessions were usually terminated when the staff member decided that the pupil had had enough, on the basis of yawns or decreased responsiveness. Each of the six members of staff were interviewed individually after the videotaping of the study had ended.

The Findings

From this study it appeared that interaction was very important for the pupils, and staff emphasised the fact that '*it builds a good relationship*' and '*there is confidence and trust that is built up*'. Staff also talked about other positive effects of Intensive Interaction, which included positive outcomes for the other pupils in the class; the staff being more relaxed and more willing to wait for a pupil's responses; and improvements in staffs' observation skills.

In general, it was claimed that staff developed high levels of expertise, and that the interactive experiences '*had benefited their pupils and improved their own working practice*'. Staff also claimed that the positive effects of the interactive experiences '*also extended to other pupils in the class*' as the staff had become '*more relaxed, more tolerant, and more willing to wait for responses*'.

Evaluating the Effectiveness of Intensive Interaction Teaching with Pupils with Profound and Complex Learning Disabilities

Watson, J. & Fisher, A. (1997)
British Journal of Special Education, 24 (2), 80-87.

This research evaluated two teaching methods, including the use of Intensive Interaction, and was carried out in a Scottish school for pupils with very severe learning difficulties and multiple impairments. Six staff-pupil pairs were studied over nine months, with the study attempting to observe any changes in the pupils' behaviour. The question under research was whether Intensive Interaction experiences are especially facilitatory in comparison with other school experiences.

The Participants

The participants were pupils with very severe learning difficulties and often multiple impairments, aged between 10 and 19 years.

Research Study 1 - the Methods & Findings

Intensive Interaction sessions were videotaped at six-week intervals on up to six separate occasions for each staff-pupil pair (the same staff member worked with each pupil over the whole period). The use of the Pre-verbal Communication Schedule (PVCS) enabled the researchers to assess the pupils' typical communicative behaviour during the classroom activities. From the PVCS assessments and the data from the videotapes, the authors claimed that there were some '*striking*' examples of social or communicative behaviours evidenced during sessions of Intensive Interaction that were not observed during '*other classroom activities*'.

Research Study 2 – the Methods & Findings

In this study the teacher used two distinct teaching methods, Intensive Interaction and teacher-directed group activities. During the teacher-directed group time the children took part in '*music and movement activities, with specified goals planned and controlled by the teacher*'. The researcher gathered evidence using recording sheets and video recording. From the analysis of their findings, the authors claimed that Intensive Interaction was '*a more rewarding social experience*' for the pupils, and one '*in which they showed initiative and control*' over the nine-month period, and pupils tended to be '*passive recipients*' of the teacher-directed group activities. During the Intensive Interaction sessions all the pupils '*demonstrated higher levels of active participation and enjoyment*'.

Some Discussion

The findings from both studies imply that Intensive Interaction not only adds to the quality of life of the pupils, but also that they learn to apply new skills. In the Intensive Interaction sessions, the pupils were found to show '*greater levels of engagement and initiated communications more effectively than during other class activities where they played a more passive, responsive role*'.

The authors therefore claim that '*more emphasis should be placed on physical contact and handling, and on a more playful approach to the curriculum*'. The authors also assert that '*the importance of such experiences, which enable more meaningful involvement in their [the pupil's] social world, cannot be overstated*'.

Sam's Story: evaluating intensive interaction in terms of its effect on the social and communicative ability of a young child with severe learning difficulties

Kellett, M. (2000)
Support for Learning 15 (4), 165 - 171.

This research paper concerns a single case study that was part of a larger, more comprehensive longitudinal study of the use of Intensive Interaction in the early education of children with severe learning disabilities.

The Participant

Sam was a five-year-old boy at a community special school, and he was halfway through his reception class year. His communication abilities were judged to be '*at the very early pre-verbal stage*' and he was indicated by the school staff as living '*in a world of his own*'. He did not use any symbolic language or formal signs, made no eye contact with other people and appeared not to observe, nor respond to, other peoples' facial signalling. He often engaged in self-stimulatory behaviour such as '*finger play and repetitive jiggling*'.

The Method & Findings

Using a '*multiple-baseline interrupted time series methodology*' combined with weekly systematic video-recorded observation over a period of one academic year, the author shows just how much progress Sam made after the initiation of daily 10-minute sessions of Intensive Interaction.

Also employed for data generation were two published assessment measures: Kiernan and Reid's *Pre-Verbal Communication Schedule,* and an adaptation of Brazelton's *Cuddliness Scale.*

From this research the major claims made for Sam's observed responses to the Intensive Interaction intervention included:

- *'Huge steps'* forward for Sam in *'Looking at or towards a partner's face'.*
- *'Modest progress'* in the incidence of 'social physical contact'.
- Sam's ability *to 'attend to a joint focus or activity with the teacher… developed dramatically'.*
- *'Clearly evident'* progression for Sam in the incidence of *'eye contact'.*
- Sam's vocalisations *'changed considerably'* and he *'began to use his vocalising ability to respond contingently and to initiate contact'.*
- A highly significant increase in the time Sam spent *'engaged in social interaction'.*

Some Discussion

In conclusion, the author cautions against generalising too much from the findings of this single case study. However, with this study the author shows how slow progress can be made visible for one of her participating pupils in a non-comparative or judgemental way. Furthermore, although the paper carries a serious academic message, and delivers vitally important evidential backing for the use of Intensive Interaction, it does so in such an optimistic and engaging way that it would be difficult not to be uplifted and personally moved by reading it.

Teachers' talk styles: communicating with learners with severe and complex learning difficulties

Nind, M., Kellett, M. & Hopkins, V. (2001)
Child Language Teaching and Therapy, 17 (2), 143-159.

Some Background: the authors of this paper argue that the communication difficulties experienced by those with severe or profound learning disabilities have been typically attributed entirely to the learning-disabled person, and therefore interventions are usually aimed at enhancing **their** communicative abilities. In this paper, Intensive Interaction is conceptualised as '*transactional*' in nature, and as such difficulties are seen as arising from both sides of the communication process.

The authors note that research studies indicate that parents of disabled children tend to adopt a more directive approach to communication, whereas in contrast, mothers of typically developing children adopt a less directive style of interaction labelled '*Motherese*', which uses slow, simple language with an exaggerated use of pitch. It is suggested that '*Motherese*' is designed to maximise the engagement level and understanding of the child. '*Motherese*' is also noted to employ vocalisations in unison with the child, use imitations of vocal pitch, rhythm and duration and promote the use of turn-taking, techniques similar to those used in Intensive Interaction.

The Method: this study examined the interactive talk of teachers engaging in Intensive Interaction, and the degree to which '*Motherese*' was used to engage their learners. 4 teachers were each asked to submit 2 video clips of them practising Intensive Interaction with a partner. These videos were rated for evidence of '*Motherese*', with the authors also identifying if some particular features of '*Motherese*' were more common than others.

The Results: the results showed that in all of the 8 videos '*Motherese*' was demonstrated, although the amount used varied considerably between participants. No particular feature of '*Motherese*' was found to be evident in all of the videos, suggesting that the use of the *Motherese* style is individual to each interactor.

The teachers who were identified as most successfully engaging their interactive partners were noted to employ a wide range of elements of '*Motherese*' in their interactive repertoires (although these elements were not used on every occasion). '*Contingent Vocalisation*' or '*joining-in*' was identified as a core feature of '*Motherese*', and it was indicated as being more naturally used than other aspects.

Some Discussion: this research found that '*Motherese*' was an important component in the more successful interactions observed between teachers and learners with severe or complex learning difficulties.

From this the authors concluded that the differentiated interactive styles highlighted were evidence that the teachers were influenced by their interactive partners and modified their own interactive approaches accordingly. The authors believe that such a finding implies that the source of any identified communicative difficulty does not lie entirely with the learning-disabled person. Instead, they identify a shared or 'transactional' model as a more accurate representation of the communication difficulties experienced by people with severe or profound learning disabilities.

Jacob's journey: developing sociability and communication in a young boy with severe and complex learning disabilities using the Intensive Interaction teaching approach

Kellett, M. (2003)
Journal of Research in Special Educational Needs, 3(1), 18–34.

This paper reports on the use of Intensive Interaction with Jacob, an 8-year-old boy with severe learning difficulties. Jacob was pre-verbal with epilepsy and physical impairments. He was unable to weight-bear or sit for long periods and would often become distressed and was prone to self-injury e.g. banging his head or elbow. He was reported to spend most of his time in social isolation, engaged in various forms of stereotyped activity.

Methodology: a multiple baseline interrupted time series methodology was used. Jacob was filmed over a 5-week baseline and a 42-week intervention phase, and various social behaviours were coded. Also, a teacher's log was kept alongside sessional Intensive Interaction reflection sheets.

The Intensive Interaction sessions: a teaching assistant, Emma, volunteered to work with Jacob with the support of the class teacher. Initially Emma had to work hard to gain Jacob's attention, and she decided to work with Jacob out of his wheelchair. She sat Jacob face to face on her knee and responded to any of his actions (even burps & sneezes) with an imitation or a positive comment. Jacob continued to engage in his rocking activity when on Emma's knee, but she turned it into a game: rocking rhythmically with him and singing 'Row, row, row the boat.' Jacob loved this - indicating his pleasure with smiles. Soon Jacob was initiating the game, taking hold of Emma's hands and starting the rocking himself. Other games were introduced e.g. the teasing rhyme '*if you see the crocodile, don't forget to scream*', with Emma and Jacob both 'screaming' together. As time went by Jacob became more interested in his interaction with Emma, and he would scrutinise her face and engage in eye contact and, on occasions, even stroke her hand or face.

The findings:

- In the baseline phase the percentage incidence of Jacob not interacting averaged 82.9%, but there was an immediate and substantial change once Intensive Interaction sessions began (the average incidence of no interactive behaviours fell to 11.6% in the intervention phase).
- As soon as the Intensive Interaction started Jacob began to look at Emma's face, with a surge to 75.7% incidence after week 1 of the Intensive Interaction sessions. There was also a second surge to 85% at week 26, after an 11-week gap in the I.I when Emma was ill*. Despite this setback the average incidence of looking at or towards Emma's face went from 8.4% at baseline, to 48% in the intervention phase.
- Another early and sustained development was the ability to attend to a joint focus, with this increasing from an average of 3.7% at baseline to an average of 65.5% during the Intensive Interaction.
- 2 other behaviours that emerged were eye contact and social physical contact e.g. the touching of a hand or a hug, with both behaviours being absent before the onset of Intensive Interaction.
- Jacob's engagement (i.e. a state when Jacob was completely absorbed in his interaction with Emma) showed average incidence figures of 46.4% during the intervention phase compared with 2.6% at baseline.

Observation data from the video was triangulated by the two assessment schedules: Kiernan & Reid's *Pre-Verbal Communication Assessment Schedule* and Brazelton's *Cuddliness Scale* – these schedules showed no progress in the five weeks of baseline. Jacob was able to achieve 14.3% of the pre-verbal communication descriptors during baseline, but at the end of the study this figure had risen to 56.6%.

Jacob's baseline scores on the Brazelton's Cuddliness Scale (a measure of physical sociability) showed him as responding passively to social physical contact - '*neither actively resisting nor participating*'. But after 5 weeks of Intensive Interaction, this had moved up to point 5 on the scale - '*usually relaxes and moulds when first held*'. At the end Jacob progressed even further where he, himself, was initiating the social physical contact.

Staff and researcher observations: Discussions with staff showed unanimous acknowledgement of the immense progress Jacob had made since starting out on his Intensive Interaction journey: his self-injurious behaviours had all but vanished; his stereotypical behaviours had greatly reduced; he was much more alert and aware of his peers and environment; he was able to participate in group activities.

Staff were also of the opinion that Jacob had become a much happier child. He had progressed from being a 'hard to reach' child, who spent the majority of his time in self-injurious stereotypy, to a happy, socially interactive child who could participate in joint activities, engage in purposeful social interaction and was beginning to use some formal communication skills.

*(*unfortunately, Emma was off work for 3 months, and the effects of this are referred to in the analysis of the data).*

Intensive Interaction in the inclusive classroom: using interactive pedagogy to connect with students who are hardest to reach

Kellett, M. (2004)
Westminster Studies in Education, 27 (2), 175-188.

In this paper Kellet describes how I.I. can support sociability and communication development for pupils who are the hardest to reach, with one case study (Finn) being used as an exemplar. Kellet states how I.I. '*focusses on making the curriculum fit the student rather than the other way round*', and that the responsive nature of I.I. begins by *'respecting whatever stage that individual is at in her or his development and celebrating what she or he is capable of doing'*, with I.I. providing a '*first point of connection which is at the heart of inclusive ideology*'.

The case study: Finn was aged 6 and had severe learning difficulties. He was 'passive', with staff finding it difficult to engage him in any form of social interaction. He often lay on the floor or had his head down on a table, spending much of his time chewing his clothing, or other items he could get. A teacher and 2 TA assistants worked as a team in Finn's class: none had any previous I.I. experience. All 3 attended a one day of I.I. training and were keen to try the approach.

Baseline data was collected for 6 weeks prior to any I.I., after which Finn had a daily I.I. session of 15-20 minutes with a TA. However, after 3 months the class teacher changed and the I.I. sessions become less regular as the new teacher increasingly prioritised other activities. At weekly intervals (later reduced to fortnightly) over a 1 year period, 5-minute video observations of Finn were made during the I.I. sessions, and at other times, across both the baseline and I.I. intervention phases.

From the video data, eye contact, looking at/towards the face of the interactive partner, smiling, vocalisation, and 'engagement' (i.e. *'a state of absorbed intellectual or emotional arousal and connectedness'*) were coded, analysed and changed into %s for ease of comparison - with inter-observer agreement = 96.1%, and intra- observer agreement = 96.3%.

Findings: During the baseline phase the incidence of Finn looking at or towards the face of his interactive partner averaged only 5%. This changed rapidly once the I.I. sessions began and increased to a mean of 31% over the intervention phase. Similar progress was made in Finn's ability to make social physical contact, increasing from a baseline mean of 2.5% to a mean of 28.2% in the intervention phase. The incidence of Finn making eye contact before I.I. started was virtually non-existent, but progress shown in this area was seen to be '*extremely encouraging, given that eye contact is such an important element in sociability and communication*'.

Increases in Finn's ability to attend to a joint focus and his levels of 'engagement' demonstrated how positively Finn responded to the I.I. approach. A mean score of 14% in the baseline phase for joint focus increased to a mean of 67% in the intervention phase, with two high peaks of 93%. The data for engagement was also seen to represent *'important evidence of sustained and absorbed social interaction'*: a baseline mean of 2% changed rapidly once the I.I. started with a '*steadily rising incidence marred only by regressions related to the loss of continuity of vacation periods'.*

The importance of teamwork: Kellet argues that from of this research we should understand that '*for interactive pedagogy such as I.I. to be implemented with optimal outcomes then effective teamwork is essential*'. Visible, tangible support for needs to be evident at the managerial level from the earliest possible stage, and also that senior management should be involved in *'I.I. workshops alongside staff who intend to practise'* with such training ideally done '*as a whole-school exercise on a nominated training day, with senior managers visibly participating'.*

Some final reflections: according to Kellet, '*for those students who have not yet learned the fundamentals of early social communication, developing sociability and communication is an essential first step in their learning. Without it learning cannot become meaningful*'. She then goes on to state that I.I. is one approach within an 'umbrella of interactive pedagogies' that has been shown to be particularly successful. This paper finally argues the case for its wider adoption in inclusive mainstream schools.

Catherine's Legacy: social communication development for individuals with profound learning difficulties and fragile life expectancies

Kellett, M. *(*2005)
British Journal of Special Education, 32 (3), 116 – 121.

This paper summarises case study evidence of how an 11-year-old girl's quality of life was transformed by the adoption of Intensive Interaction. Despite the objective research perspective of such a paper, published as it was in such a highly regarded academic journal, what emerges is a very emotive and powerful story about one young girl's dramatic social development in the last few months of her short life.

In this paper Dr Kellett, of the *Children's Research Centre* at the Open University, also explores the methodological and ethical considerations with respect to research with children with the most profound disabilities and fragile life expectancies, and the implications of a person's life experiences have for policy and practice in this area.

The Participant: Catherine, the focus of this paper, was 11 years old and at home with her family. She had profound learning disabilities compounded by quadriplegia, perceptual impairments and severe and frequent muscle spasms and seizures. She was physically very frail and suffered frequent infections and illnesses.

The Method: prior to the Intensive Interaction intervention at her school, Catherine was perceived by staff as being entirely passive, making no eye contact or vocalisations. Once the Intensive Interaction sessions commenced and a limited amount of video footage was gathered and analysed, dramatic developments were observed in two particular areas, those of eye contact and the ability to attend to joint focus activities.

The Results: Catherine's engagement in eye contact was seen by the researchers as '*a tremendously important development*' as it had changed from '*zero incidences*' prior to the use of Intensive Interaction. Also noted were new behaviours that developed shortly before Catherine died, one being '*turn-taking*' vocalisations using '*tutting*' sounds based around Catherine constantly blowing saliva bubbles, which developed into a '*raspberry blowing*' game, and it was during this activity that staff felt they were '*really connecting*' with her.

The video on which the observations were based are described as '*alive with smiles, eye contact, warm physical interaction and the sound of Catherine using her tongue in a 'tutting' sound as part of a playful imitative game*'.

Also reported were the development of similar interactive communication within Catherine's family and the generalisation of newfound communication outside of the research scenario. Catherine's mother started to use the approach after watching some of the research sessions and was reported to particularly enjoy the '*tutting*' and '*bubble blowing*' games with Catherine. During these times Catherine's mother was happily '*rewarded with smiles and eye contact*' and she also described the joy of the family in being able to finally connect with Catherine. She also very movingly stated that the '*last few months were their happiest times together*'.

Some Discussion: As Dr Kellett concludes, Catherine's study '*adds to our knowledge and understanding of communication development for individuals who are similarly frail and profoundly impaired*', and she goes on to state that '*Catherine is no longer with us, but she has left a rich legacy behind her*'.

Early Communication strategies: using video analysis to support teachers working with preverbal pupils

Anderson, C. (2006)

British Journal of Special Education, 33(3), 114-120.

This article examined interactions between teachers and pupils and looked to see if the communication strategies employed impact on interactions. Beveridge & Hurrell (1980) found that teachers could maintain an interaction by immediately responding either verbally or non-verbally or could discourage pupils by ignoring or not responding to an initiation. Nind, Kellett & Hopkins (2001) observed that teachers with a wider range of *'motherese'* techniques tended to be more successful in engaging students.

Aims and Objectives: The purpose of the research was to identify strategies teachers and pupils used during interaction across three aspects:

1. The number of turns pupils and teachers took during interactions.
2. The language function strategies used most frequently to initiate and respond.
3. Average words & average information carrying words used by teachers and pupils.

Methodology: 8 teachers and 12 pupils participated in the study. The teachers experience in working with pupils with learning difficulties ranged from under a year to over 18 years. The pupils ranged in age from 5 to 16 years old, and were at the earliest stages of communication development, functioning at or below the 'two-words together' level of language. 28 video-taped sessions were sampled purposively with 36% of the videos were by the author's supervisor: giving an inter-observer reliability of over 0.9.

The videos were transcribed for both verbal and non-verbal behaviours and then coded using qualitative analysis for:

a) ***Turns*** – a verbal element or utterance and non-verbal elements, or both.
b) ***Initiations*** – a conversation or causing a change in topic or subject shift.
c) ***Responses and strategies*** – these are turns where a reply is made to an initiation which relates to the shared subject or slightly extends it or checks that the turn was understood by the listener.

Results:

Turns - Teachers took the lowest number of turns when Adopting Intensive Interaction principles than when using the "traditional" teacher-dominant approach. When looking at the same pupil with different teachers the results indicate that the teacher's interaction styles determine how much of the conversation is shared between the two partners.

Strategies – The strategies used most frequently by the teachers to initiate an interaction were questioning, commenting, or gaining the pupil's attention. Teachers used commenting, gaining attention or repeating/simplifying most to respond in an interaction. The pupils initiated interaction most frequently by showing interest, commenting, and vocalising. Their most frequent responses were by showing interest, making an affective response, or by comments.

Word counts – For the teachers the number of words used ranged from 0 (teacher adopting Intensive Interaction principles) to an average of 4 words. However, the number of words used varied based on the individual abilities of the child e.g. for an easily distractible child the teacher used less words and relied more on Makaton signs with verbal cues.

Conclusion:

The results indicate that the manner in which a teacher communicates with someone with a learning disability does affect how the interaction progresses and the level of engagement from the individual. Adopting teaching styles to match the pupil's level of understanding and idiosyncrasies allows for greater participation from the pupil and perhaps a more rewarding experience for them.

Using Intensive Interaction to add to the palette of interactive possibilities in teacher-pupil communication

Barber, M. *(*2008)

European Journal of Special Needs Education, 23 (4), 393-402.

In 2003 Intensive Interaction was introduced to Bayside Special Developmental School in Melbourne, Australia. The school had 80 pupils with moderate to profound learning disabilities (aged from 2-18 years). Class sizes varied from 4 to 8 pupils staffed by one teacher and one support worker.

After initial staff training 11 pupils were selected for the study, the selection criteria including the pupils' communication difficulties, high levels of social isolation, as well as '*large amounts of time spent in ritualised, self-oriented behaviours*'. Baseline videos of at least five minutes length were made for each pupil showing them in group activities and '*individual teaching sessions*'.

Intervention: During a 30-week period staff interacted with pupils using Intensive Interaction, rather than task or outcome focused activities. These interactions were often initiated by pupils themselves during "downtime" and informal periods. Staff observed the activities that appeared to lead to increased sociability and positive affect.

Evaluation: Staff moderated video footage to reflect on their success during the process. Videos of 6-15 minutes were rated for the following "indicators of involvement" (adapted from Kellett & Nind, 2003): "No interactive behaviour"; "look at face"; "smile"; "socially directive physical contact"; and "engaged".

The data collected appeared to show an increase in the social interactivity and engagement for the pupils. The periods of "no interactive behaviours" also decreased between the baseline and evaluation period. There was also an increase in pupils initiating social contact with their communicative partner. Things like physical proximity, touch, turn taking and interactive game playing increased much more after the intervention period. It was noted that student "J" regularly used touch as a communication tool and student "A" was prompted to use touch a lot more as a result of the support worker's use of spinning saucers.

It was noted that the students (all with ASD) appeared to want to socially engage the communicative partner, not communicate purely functionally.

Conclusion: The report recognises that, while the results are limited, it appears to show the positive effects of adopting Intensive Interaction in schools as a means of increasing the sociability and expression of pupils with profound and multiple learning disabilities and autistic spectrum disorder.

The paper also acknowledges the effect that teachers can have when they employ Intensive Interaction. Teachers are not as limited when a session is not outcome focused, and this makes a session more enjoyable for both teacher and pupil, and more satisfying interactions take place when the teacher responds to the student's individual behaviours.

Fostering Social Engagement in Romanian Children with Communicative Impairments: Reflections by newly trained practitioners on the use of Intensive Interaction

Zeedyk, M., Davies, C., Parry, S. & Caldwell, P. (2009)

British Journal of Learning Disabilities, 37 (3), 186-196.

This paper reports on a study on the effectiveness of Intensive Interaction being used in Romania with children with severe communicative impairments. The children, aged 4–15 years in state care, attended a specialist day centre. The children displayed severe developmental delays; no diagnoses were available, but their behaviours suggested autism, profound learning disabilities, and sensory impairments). All were socially withdrawn and frequently engaged in self-harm (e.g. biting, scratching or hitting themselves). Many also had difficulties in walking or feeding themselves.

In this study a group of UK volunteers (aged 16-25 years) worked closely with the children for a 2-week period. They were given a brief training session in the basics of Intensive Interaction and then encouraged to use it with the children. After 2 days' experience, the volunteers were asked to reflect on their experiences of using this approach.

Results and Discussion: Some of the most frequently cited changes in the children's behaviour were perceived to be: an increase in the children's attention to their partner; an increase in the amount of positive affect displayed by the children; and an increase in their proximity to others. Such shifts were frequently associated with changes in vocalisations and animation. Finally, increased flexibility and ease in interactions seemed to provide a particularly strong indicator of increased engagement. Also reported was a noticeable decrease in distress and self-harming behaviour in more than one third of the children.

For a small number of children, an additional positive outcome was an increase in the level of their attention to the wider environment, strengthening the evidence that Intensive Interaction promotes interests across a range of domains, rather than the social domain alone.

Overall, the study found that the behavioural shifts predicted in the Intensive Interaction literature were observed by the volunteers. Although the study did not examine the children's behaviour in detail, the volunteers perceived dramatic and prolonged increases in the children's social engagement. Below are some extracts from the volunteers' testimony:

> *'I started by just imitating Paula's actions … then I introduced sounds… over the next 10 minutes of imitation, she was right next to me and put her hand in my lap, allowing me to stroke her hand and was smiling and even giggling, which I haven't really seen her do before'.*
>
> *'Today has been amazing … I imitated Andrei, via clapping in different rhythms and also clapping around him, not just the way he prefers to. It means it does feel you are having a conversation with him, or playing a game'.*
>
> *'For the first part of the week, Mircea was very quiet, making only infrequent noises…. When Intensive Interaction was tried, Mircea became much more engaged and began to look directly at the person holding him, rather than over their shoulder'.*
>
> *'I think the technique really worked. Paula didn't get anxious or upset during the whole session, which really amazed me because normally she gets upset at least once during the session'.*

Conclusions: The authors interpret the results of this study as providing qualitative evidence that Intensive Interaction is effective in promoting social engagement in children with severe communicative impairments that arise from (or are at least exacerbated by) poor early care. The findings also demonstrate that such increases can be identified by practitioners as soon as they complete their training i.e. it appears that practitioners begin to be able to generate such encouraging outcomes with minimal training.

An investigation into an interaction programme for children on the autism spectrum: outcomes for children, perceptions of schools and a model for training

Jones, K. & Howley, M. (2010)

Journal of Research in Special Educational Needs, 10 (2), 115-123.

The Background: The Learning and Autism Support team (LAST) was a team within a UK local authority Special Needs Teaching Service. From this team an interaction specialist (Interactionist) was given the role to train a school's TAs (trainees) in approaches based on parents-infants interactions, including Intensive Interaction. One-to-one sessions were carried out, included children engaging with the 'Interactionist', and engaging with trainees as the Interactionist mentored them.

Methods: 5 primary schools completed the programme over a 1-year period, with participating children identified as having autism, Asperger Syndrome and autism with learning difficulties. Views were collected from SENCos, trainees and teachers in each school. The participants' views were gathered via a variety of methods e.g. questionnaires followed up by semi-structured interviews. Questionnaires were also given to parents of the children. All interviews were recorded, transcribed and thematically analysed.

Findings: Overall, outcomes for the children were reported as positive in terms of relationships with peers and adults, improved communication, behaviour and enjoyment of interactions. Improved Interactions with peers were described by both class teachers and trainees:

- '*Interaction with children in the playground has been the most obvious immediate benefit*.' (Trainee)
- '*…her teacher came down and said: 'I have had the longest conversation I have ever had with him*.' (SENCo)
- '*She really has enjoyed it and her behaviour… in the classroom has improved …*' (Trainee)
- '*He can now play with two other children around home …. he is calmer for longer and can play family games*.' (Parent)

Despite some initial anxieties, most trainees viewed the programme as positive. Trainees indicated high levels of satisfaction with the programme which included modelling of one-to-one sessions with the Interactionist. The training was reported to have a direct impact upon trainees' confidence in how to implement interaction approaches. The partnership between the trainee and the Interactionist was identified as a key component of the approach. Other key features included on-going monitoring, evaluation and recording. It also became clear that the key factors central to achieving the programme aims was the development of partnerships within a systemic approach. All of the schools indicated that they would continue the programme and were keen to train other TAs.

Discussion: whilst noting the positive outcomes, the authors suggested caution in generalising the findings due to the small-scale size of this study. However, the positive outcomes demonstrated that the aims and principles of interactive approaches have relevance for children, regardless of their cognitive ability and that such approaches can be incorporated into mainstream practice. It was clear that the programme provided a clearly delineated process of professional development and support, enabling TAs to participate in a journey from the trainee to autonomous programme deliverer. Implicit within this is the view that imposing an external 'expert' upon school staff can have a 'deskilling' impact and serve to propagate the view that effective SEN support is the remit of a minority of skilled individuals.

The authors finally conclude that vital to the maintenance of an effective system are the roles, responsibilities and remits of all the key players. In the context of this study, all participants felt a sense of ownership of their respective spheres, while engaging in a partnership to ensure the success of the programme as a whole.

The training of a child with autism in a Greek preschool inclusive class through intensive interaction: a case study

Argyropoulou, Z. & Papoudi, D. (2012)

European Journal of Special Needs Education, 27 (1), 99-114.

This study examined social interactions during play between a young boy with autism and a typically developing girl, before and after the boy was trained by his teacher through intensive interaction. The study was conducted in a preschool inclusive class in Athens, with a 6-year-old autistic boy called Philippe.

A highly empathic girl, Anna, was selected as Philippe's play partner. A range of materials and toys were made available during the sessions to facilitate verbal and non-verbal communication.

The 2-month study used an ABA single case design, with data recorded in 3 different phases, baseline (A1), post-training (B) and follow-up (A2). Each phase included 5 sessions of 10-15 minutes over 2 weeks; each session being videotaped and the first author keeping field notes. The children were told that they were 'playing to have fun'.

Measurement: The children's social behaviours were categorised as initiations and responses; for each initiation, the other child's response, positive or negative, were recorded Initiations included (a) waiving to or holding the other child's hand; (b) drawing attention to an object or activity; (c) verbal communication; (d) body contact; and (e) giving a toy or initiating a game.

The 'responses' were coded as 'positive' if a child answered a question, responded positively or imitated the actions of the other child. 'Negative' responses included any avoidance or aggressiveness.

Results: Before the research Philippe and Anna were not playing together. After the study, Anna and other peers were initiating contact with Philippe and tried to include him in their games. Philippe responded positively when with the children and seemed happy.

Sometimes Philippe also made initiations to Anna. During Philippe's training a detailed sessional diary evidenced improvements in his social and emotional engagement, eye contact, verbalisations, body orientation and contact, and smile from the first session onwards.

Conclusion: This study showed that 'Intensive Interaction' helped a child with autism to increase his social engagement. His initiations increased in the post training phase but returned to the initial level in the follow up phase. However, his increased levels of positive responses to the peer's initiations remained at a high-level post training.

Overall, the results of this study accord with the findings of previous research. Firstly, children with autism are more likely to engage with someone if that person provides active input. Secondly, such input is more effective when it 'scaffolds' the child with a disability through Intensive Interaction and interactive play. Lastly, 1-to-1 peer to target child ratio increases the likelihood of social initiations and interactions between a child with autism and his peer.

Naturally, a single case study has inherent problems of generalizability. Further research is therefore needed to determine how such 'Intensive Interaction' training can be applied in order to help the social interaction between children with communication difficulties and their peers in mainstream settings.

Intensive Interaction in the mainstream classroom: evaluating staff attitudes towards an inclusive socio-communicative intervention

Eleanor M Lloyd (2015)

Good Autism Practice, 16 (2), 49-68.

Current national strategies require children to be mainly taught in whole class groupings, this being particularly challenging for pupils with autism. This project investigated the possibility of achieving inclusion for children with autism via daily classroom-based sessions of 'Communiplay', which is based on Intensive Interaction (Communiplay differed from 'traditional' Intensive Interaction in that it takes place in small groups and is structured around play with LEGO, this being seen as inherently rewarding for pupils with autism, whilst also promoting child initiation and adult imitation in mutually enjoyable interactions).

The project involved 6 classes (of <30 pupils aged 5-7 years) in an inner-city mainstream school. The classes included one or more pupils with a language or socio-communicative disorder. The teaching staff were given a 70-minute training session on Intensive Interaction and Communiplay.

Three Communiplay groups were formed in each class, consisting of: one 'focus pupil' with a diagnosis of SEN who was partnered with the adult for Intensive Interaction and 2 other pupils matched as play partners. The teacher and TAs participated in one Communiplay group each day.

Research design: This project combined qualitative elements with a quasi-experimental design and collected data on the views of the teachers and TAs via a range of questionnaires, logs and observation schedules.

Findings: the findings of this study indicated '*that Communiplay may be effective in strengthening positive staff-pupil relationships and the amount of pupil-initiated interaction with staff*'. Also, the author states that '*staff-pupil interactions in the class as a whole may have been positively influenced by the intervention, even though the majority of children did not participate in a Communiplay trio*'.

10 elements were seen as relevant to the quality of pupils' interactivity, these being:

1. An expectation of peer conversation
2. Staff being approachable and interested
3. A relaxed pace to arriving in class
4. Staff deliberately giving attention to focus pupils
5. Staff sitting at the child's level and children interacting while standing
6. Pupils having freedom to choose from a range of activities
7. Mutual laughter
8. Informal physical contact conveying connection
9. Extended interactions
10. Staff being available to relate, rather than being busy with tasks.

The study also found that most staff were comfortable doing Communiplay in the classroom. However, the staff also found it impractical to fit 3 sessions into their daily schedules. Also, the single training session on Intensive Interaction was viewed as insufficient to achieve consistency of practice. The difficulty teachers had fitting Communiplay into the timetable apparently indicated an unwillingness to prioritise it over other, more instructional, teaching tasks.

In conclusion: despite a number of acknowledged limitations to this study, the findings confirm the difficultly a class teacher has in making Intensive Interaction available in a mainstream classroom. According to the author, radical shifts are needed in staff preparedness, deployment and practice. Also, a more individualised application of the National Curriculum is necessary to enable pupils with autism to develop their socio-communicative abilities.

Gaining the power of initiation through Intensive Interaction

Calveley, J. (2017)

Learning Disability Practice, 20(1), 19-23.

Rosie was 15, living at home with her mother and a team of home carers. She had complex health needs, requiring regular nursing care and frequent hospital admissions. She was non-verbal, physically disabled and visually impaired. At the time the Intensive Interaction started Rosie spent all day in bed.

Making a connection: in this case study the author worked with Rosie, her mum and her carers to develop their use of Intensive Interaction, this involved modelling 'how to do it'. Interactions were filmed so that the video could be used as a teaching tool, and also for progress outcomes to be recorded. As Rosie was visually impaired the author looked for alternative ways of signalling her social availability, and used touch, hearing and smell (e.g. always wearing the same perfume). The author would say "Rosie" and "hello" and then gently hold her hand and monitored her reactions, giving Rosie the chance to take the lead and do something to which the author could then respond.

Responsiveness: Early interactions involved contingently responding to the rhythm of Rosie's breathing. This appeared to promote an awareness in Rosie that the author was there for her, as she turned her head towards her, and her facial expression indicated that she was intently attending to her. When Rosie squeezed her hand, the author responded by gently squeezing back, or when she stretched her arms out the author commented with an "aah, big stretch". Responses were made to all of Rosie's attempts to vocalise in order to motivate her to find and use her voice more.

Through frequent repetition of these simple interactions Rosie began to express a wider range of intentional sounds and movements, vocalising with more clarity and frequency. She became more physically active, moving her arms, hands and upper body, and became more facially expressive and smiled more.

Progress: Intensive Interaction was initially carried out as a 'session', but then also during the care tasks that took up a large part of Rosie's day. Rosie's mum and the care team also became more confident in using Intensive Interaction and were there to provide the repetition needed to make progress.

Rosie's progress over 3 months:

- More engaged in interactions and focused on interaction for a longer time: turned towards the person interacting with her.
- Developed greater sense of social connection and was more aware of other's responses.
- Vocalised more frequently, with more intent and expression. Made new sounds, e.g. 'hi.'
- Personality and sense of humour more evident in interactions: more smiles, more facially expressive, seemed happier.
- Responded with pleasure when cheek stroked and swallowed more often.
- More movement within interactions and improved circulation following interactions.
- More relaxed during and following interactions: muscles appeared less tense, and also able to pass urine following interactions.

Conclusion: Intensive Interaction enabled Rosie's mum and carers to connect with her socially, emotionally and psychologically. This enabled Rosie to be an active participant during the interactions and motivated her to want to communicate more.

Controlled study of the impact on child behaviour problems of Intensive Interaction for children with ASD

Tee, A. & Reed, P. (2017)
Journal of Research in Special Educational Needs, 17 (3), 179–186.

This study explored the effect of a home-based Intensive Interaction programme on 40 boys with autism, with the boys' levels of challenging behaviours compared to a control group. The study also looked at predictors of the success of the intervention, including levels of depression in mothers.

Materials: The Social Communication Questionnaire (SCQ) was used to evaluate ASD symptoms; the Strengths & Difficulties Questionnaire (SDQ) used to evaluate the emotional and behavioural disorders, and the Hospital Anxiety & Depression Scale (HADS) used to assess the severity of anxiety and depression in mothers.

Interventions: 1-2 hour Intensive Interaction sessions were conducted 5 days a week in the child's home after school by university student tutors who were trained in Intensive Interaction. These tutors followed the child's lead by joining in with, imitating or commenting on their actions, with timing and rhythm used to gain and hold the child's attention. The children in the control group were involved in group/outdoor activities in the 1-2 hour period; they did not receive Intensive Interaction.

Procedure: Prior to the intervention, a child psychologist assessed the children's intellectual and language functioning; with both groups matched on these functioning variables as well as by age. Also, the children's mothers completed the SDQ, SCQ, and HADS questionnaires. After the 6-month programme period, mothers rated their children's behaviour again by completing another SDQ.

Results: There were no differences in SDQ scores prior to the intervention. The problem behaviour scores decreased in both groups over the 6 months, with the Intensive Interaction group's score only slightly more than the control. A between-subject analysis of covariance revealed no statistically significant effect of intervention; 3 participants in the Intensive Interaction group showed a clinically significant reduction in problem behaviour, whilst using the same criteria, 3 participants in the control group also showed a clinically significant reduction in problem behaviour.

Discussion: A number of potential factors were identified to explain the results; firstly, this study was the first to compare the effectiveness of Intensive Interaction to a control group. Secondly, participants in the control group went to a SEN school where staff are well-trained in ASD, thus the effects of employing a home-based intervention may not be noticeable. Finally, receiving 1-2 hours of Intensive Interaction for 6 months may not have been long enough to show a significant advantage over the control group.

The results do provide some insight into the predictors of improvement; less challenging pupils responded best to the programme, and therefore more appropriate targeting of Intensive Interaction could benefit some children. In addition, the child's progress could be mediated by levels of the mother's depression, highlighting the importance of working closely with parents in the planning of interventions.

Although the results suggest that Intensive Interaction is not effective in reducing problem behaviour in children with ASD, the literature demonstrates that pupils with problems besides ASD benefit from Intensive Interaction. Future studies should therefore include a wider range of outcome measures (e.g. adaptive and social functioning) to enhance our understanding of the impact of Intensive Interaction.

Measuring the impact of Intensive Interaction on joint attention and intentional communication: using the FOCAL wheels

Mourière, A. & Scott-Roberts, S. (2017)

Good Autism Practice, 18 (1), 24-45.

In this single case study paper, Amandine Mourière, an Intensive Interaction practitioner, shares her work in assessing how Intensive Interaction affects joint attention and intentional communication. She also describes the use of a new FOCAL (Fundamentals of Communication Assessment and Learning) assessment tool.

The aim of this research was to explore the efficacy of Intensive Interaction on the joint attention skills and intentional communication of Jack, a 10-year-old boy with autism, and to review the usefulness of the FOCAL assessment tool - the researcher had already established a bond with Jack and his family by volunteering in a play scheme which he attended. At the time of the study Jack attended a special school and the author worked with Jack at home, after school.

The design of the 'Fundamentals of Communication Assessment and Learning' (FOCAL) tool:

The 'Fundamentals of Communication Assessment and Learning' tool (FOCAL) used to assess Jack's communication was designed based on the 'Sounds of Intents framework' of Adam Ockelford (2013). This FOCAL tool employed a circular graphic layout (referred to as the 'FOCAL wheels') to highlight progress in the 3 separate communication modalities of: 1. Visual and gestural communication, 2. Communication through touch, and 3. Vocal and auditory communication.

Each of the 3 modalities is further divided into 3 domains: reactive, proactive, and interactive. These domains corresponding with the level of awareness in responding to communication (reactive), in causing, creating and controlling communication (proactive), and in participating actively in communication with others (interactive). These 3 domains are divided into 6 segments progressing from *'the centre, with its focus on the self, outwards, to increasingly wider communities of others'*.

Results:

- Clear progress was seen for Jack via the data collated in the FOCAL wheels in the modalities of vocal/auditory and visual/gestural, as a result of the Intensive Interaction intervention.
- Jack's awareness of the use of eye contact to communicate also progressed over time, in addition to his abilities to initiate and sustain eye contact.
- One parent also reported how Jack sought to communicate by pointing to things in the immediate environment.

From the results, it would appear that Intensive Interaction gave Jack weekly opportunities to practise and further understand the 'fundamentals of communication' (Nind and Hewett, 1994), and he was therefore able to become a communicator with more skills than he had at baseline by enhancing his intentional communication. There was also a positive reaction from his school, and Jack started to receive daily sessions of Intensive Interaction as part of his curriculum.

Concluding comments:

Clear progress was seen in Jack's communicative skills as a result of the Intensive Interaction intervention e.g. in his ability to initiate and sustain social contact, or to acquire a wider range of vocalisations. The results also support the effectiveness of Intensive Interaction with individuals at a pre-verbal level of communication by bringing about the development of their communicative skills.

The FOCAL assessment tool was designed to measure small but essential developmental steps, and to provide an improved understanding of the participant's abilities and competence as a communicator. The author concludes that the FOCAL tool has the potential to provide a user-friendly method of assessing and recording an individual's communicative progress.

The Effect of Intensive Interaction Intervention on the Social Interactions and Communication of Children with Autism Spectrum Disorder

Karimi, S., Asgari, P. & Heydari, A. (2019)

Journal of Jondishapour Medicine, 18 (6), 603-614.

Below is a reproduction of the paper's journal 'Abstract'.

Background and Objects:

Autism spectrum disorder is one of the disorders of growth, and so far, different methods have been developed to reduce its symptoms. In this research, the method of Intensive Interaction has been studied. The purpose of this study was to investigate the effectiveness of Intensive Interaction intervention on social interactions and communication of children with autism spectrum disorder.

Subjects and Methods:

The design of this study was bases on a non-randomized, semi-experimental with control group and on pre- and post-test. The population of this study included 22 children with autism spectrum disorder who were selected by available sampling among the centers of autism in Ahvaz, Iran. These children were randomly assigned into experimental and control groups. The Gilliam Autism Scale (GARS) was used to measure the variables of the research. To analyze the results, descriptive statistics including mean and standard deviations of scores were used and the covariance analysis was used to control the interventional variables in the pretest.

Results:

The mean and SD of communication for the experimental and control groups in the pre-test stage respectively were (24.36±9.17) and (21±8. 98). These values were in the post-test for the control and experimental group (23.72 ± 10.13) and (21±9.48) respectively. The results of multivariate covariance analysis showed that the Intensive Interaction method was effective on social interaction dimension n (P <0.001).

Conclusion:

According to the findings, the method of Interactive Interaction is effective on the social interaction dimension, but it is not effective on the communication. Communication mainly involves the use of language and is more specific than interaction in general. Therefore, the effectiveness of this method was confirmed on social interaction but was not confirmed by social communication.

Ref: Karimi, S., Asgari, P. & Heydari, A. (1398) 'Effectiveness of Intervention Based on Comprehensive Interaction and Social Interactions and Relationships in Children with Autism Spectrum Disorder', *Journal of Jondishapour Medicine*, 18(6), 603-614.

Autism, Intensive Interaction, and the Development of Non-Verbal Communication in a Teenager Diagnosed with PDD-NOS: A Case Study

Mourière, A. & Hewett, D. (2021)
Support for Learning, 36(3), 400-420.

Introduction: This case study focuses on the development of non-verbal communication in a teenager diagnosed with Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS), a subtype of Autism (ASD). PDD-NOS is characterized by impairments in social interaction, communication and repetitive behaviours. This study explores the effectiveness of Intensive Interaction in enhancing communication skills in individuals with PDD-NOS i.e. '*to explore the use of Intensive Interaction with people with autism for whom language does not necessarily equate with effective communication and who therefore experience social-communication difficulties*'.

Methods: The participant in this study was Ottar, a 15-year-old boy diagnosed with PDD-NOS, who is described as '*a bright young man who can access academic subjects such as maths and literacy*'. However, even though he could talk in sentences, Ottar struggled '*to successfully take part in social interactions with others*'.

The Intensive Interaction intervention involved Ottar's parents receiving weekly online Intensive Interaction video review and consultation sessions (via Skype), carried out over a six-month period.

Results: The results of this Intensive Interaction intervention, as reported by the Ottar's parents, revealed significant improvements in his non-verbal communication skills over the intervention period. Through the use of interactive games e.g. '*tickling games, and buses games'*, that '*provided a motivating and focusing vehicle for Ottar to have sustained face-to-face opportunities to code and decode non-verbal communication',* Ottar showed increased use of eye contact, facial expressions, turn-taking, and reciprocal gestures. He also displayed enhanced joint attention and a greater understanding of emotional cues. Interestingly, also noted was progress in Ottar's '*language abilities, such as using tenses and pronouns correctly, and widening his vocabulary'.*

These improvements were observed not only during the Intensive Interaction sessions but were also reported to have generalised out into social interactions with his peers (e.g. at school, being able '*to bond with another student*') as well as with other family members e.g. his sisters. Post-intervention, Ottar was also described as both '*more mature*' and '*calmer'*.

Discussion: The findings of this study highlight the potential of Intensive Interaction as an effective intervention for individuals with ASD with well-developed language understanding, specifically targeting their non-verbal communication difficulties. Intensive Interaction facilitated the development of Ottar's fundamental social communication skills, promoting meaningful engagement with others. The positive outcomes observed suggest that Intensive Interaction can be a valuable tool in improving the quality of life and social interactions for individuals with PDD-NOS.

However, it should be noted that this study focused on a single case thus limiting the generalizability of the findings. The study highlights the need for further research into the effectiveness of Intensive Interaction '*for people with autism who do not have a learning disability attached to their diagnosis*'.

Conclusion: This case study provides evidence supporting the efficacy of Intensive Interaction in fostering the development of non-verbal communication skills in people with PDD-NOS. Intensive Interaction again showed clearly positive results in enhancing social engagement, joint attention, and emotional understanding.

Intensive Interaction as an intervention approach in children with autism spectrum disorder: a systematic review

Papadopoulos, A., Vogindroukas, I., Tsapara, A., Voniati, L., Tafiadis, D. & Plotas, P. (2023)
Neuroscience Research Notes, Vol. 6 No. 4.

https://doi.org/10.31117/neuroscirn.v6i4.276

This Intensive Interaction systemic review is published by 9 academics working out of universities across Greece, Cyprus and Bulgaria and is available as a free or 'open access' publication by the online journal NEUROSCIENCE RESEARCH NOTES.

Below is a copy of the **Abstract** for this paper:

As a neurodevelopmental condition, autism spectrum disorder (ASD) is characterised by pervasive social interaction and communication deficits. This review aimed to identify and synthesise the latest literature about the effectiveness of the Intensive Interaction approach in children with ASD. The review was conducted according to the PRISMA guidelines. The total number of children with ASD was 28, aged from 4 to 14 years old, with 27 males and only one female. The studies addressed intervention goals related to non-verbal and intentional communication, behavioural difficulties, joint attention, and parent-child interaction.

The findings from the studies indicated that children with ASD had a positive outcome from the involvement in the Intensive Interaction approach. Regrettably, the constraints imposed by the methodology and design employed in the studies, coupled with the limited sample sizes (two of the studies consisted of a single case), preclude forming any definitive conclusions about the impacts of Intensive Interaction. However, the evidence is at least sufficient to support the assertions put forth by the authors.

Despite the encouraging evidence of the effectiveness of the Intensive Interaction approach, multiple factors contribute as barriers to this issue, including the inherent challenges associated with conducting high-quality research that adheres to rigorous methodological standards.

So, as is so often the case, the evidential base for Intensive Interaction is inarguably supportive of the anecdotal outcome claims made for it by its practitioners and advocates - but as this paper points out, the bar for 'definitive conclusions' to be drawn from research is rightly very high. This means that research into Intensive Interaction still needs more studies and more published papers (ideally with larger cohorts) to more fully establish the '*definitive conclusions about the impacts of Intensive Interaction*'.

To read (and download) the full paper, go to:

https://www.neuroscirn.org/ojs/index.php/nrnotes/article/view/276/231

Part B: Research with Adult Participants

Efficacy of Intensive Interaction: Developing sociability and communication in people with severe and complex learning difficulties using an approach based on caregiver- infant interaction

Nind, M. (1996)

European Journal of Special Educational Needs, 11 (1), 48-66.

The Participants: This research was carried out with six students who were resident at a long stay hospital and part time students at the hospital school. After a '*base-line phase*' of up to 6 months, daily Intensive Interaction was introduced in an intervention phase of between 12 and 18 months. Measurement of the students' behaviour was done using specially constructed observation schedules and video analysis, with Kieran & Reid's *Pre-Verbal Communication Schedule* and Brazelton's *Cuddliness Scale* also used.

The Results: There was a greater frequency of initiation of social contact, or initiation of social contact as a new phenomenon for all six students. There was also an increase in responses to proximity or physical contact in all the students, such as '*looking at the teachers face*' (3 students); '*making eye contact*' (2 students); and '*happy vocalisations*' (2 students). '*Smiling in a response to a teacher*' also increased for all the students.

Each student developed some new interactive behaviour, and these included '*looking at the teacher's face*'; '*contingent smiling*'; '*nestling into the teacher*'; '*exploring the teacher's face with hands*'; '*maintaining a state of joint focus*'; '*contingent vocalisation*', and '*taking the hand of the teacher*'.

All of the students made advances in their communication abilities measured on the *Pre-Verbal Communication Schedule,* with progress particularly evident in the areas of vocal imitation, communication through gesture, and through the use of sounds. All the students made advances in their reciprocation of warm physical contact as measured by the *Cuddliness Scale*. Also, the incidence of ritualistic behaviours or '*organised self-involvement*' decreased for four students.

Additionally, it was noted that two students who had never been able to make eye contact before, began to do so. Also, two students whose whole behavioural repertoire had been dominated by ritualistic self-involved behaviours, paused from this in order to engage in interactive games. One student changed from being a person no one could relate to, to someone with whom all the staff enjoyed interactive games. Another student who was described as '*mostly sleepy and unmotivated, became alert and responsive, vocalising and waving her arms with the excitement of an interactive game*'.

The Conclusions Drawn: The conclusions of this research were that after Intensive Interaction was introduced, the six students made observable gains in terms of their social and communication abilities, with new interactive behaviours emerging as ritualistic behaviours decreased. It was also shown that there were no significant events concurrent with the onset of Intensive Interaction, and therefore no rival explanations for the developments being caused by anything other than the use of Intensive Interaction.

The Effect of Intensive Interaction on the Sociability of a Man with Severe Intellectual Disabilities

Lovell, D., Jones, S. & Ephraim, G. (1998)

International Journal of Practical Approaches to Disability, 22 (2/3), 3-8.

The Participant: This research was conducted to investigate whether a withdrawn, 53-year-old pre-verbal man (W.) with severe intellectual disabilities showed an increase in sociable behaviour in two differing conditions.

In one, a clinical psychologist engaged in Intensive Interaction with the client; in the second, the same psychologist remained close to the client but did not interact with him (‘*proximity sessions’*). The research was conducted in a long stay hospital for people with severe intellectual disabilities.

The Results: before the interventions, the client (W.) would hum to himself and sing without words. He spent most of his time sitting alone in a corner and did not initiate any physical contact.

However, there was much more physical contact in the Intensive Interaction sessions, and in one session he squeezed the psychologist's hands as part of a game for 90% of the time (he did also make occasional physical contact during the proximity sessions).

Before the interventions W. spent less than 10% of any session looking at another person. In some proximity sessions there was an increased in looking behaviour, but, during the Intensive Interaction sessions more than 10% of every session was spent looking at somebody, with over 70% on two occasions.

During the course of the intervention, vocalisation (humming or wordless singing) appeared to increase in both the Intensive Interaction and the proximity sessions.

Also, no episodes of joint attention were recorded prior to the interventions. With just one recorded instance of joint attention in the proximity sessions. Episodes of joint attention were, however, observed during the Intensive Interaction sessions, increasing to over 70% on two occasions.

No smiling or laughing was recorded prior to the interventions. However, W. was noticed to smile and laugh during 2 proximity sessions, but more often during Intensive Interaction sessions.

W. covered his face with his clothes for 25 to 50% of the time prior to the interventions. This behaviour was only briefly evident on one of the 17 intervention sessions (during a proximity session). There were no occurrences in the Intensive Interaction sessions.

Some Discussion: the results of this research indicated that during the Intensive Interaction sessions W. tended to initiate more physical contact; spend more time looking at people; demonstrate more joint attention, and smile/laugh and vocalise more than he did prior to the interventions. He showed no examples of covering his face during the Intensive Interaction sessions, although this had been a frequent behaviour previously.

The increase in sociability appeared to generalise to the proximity sessions, although the changes were significantly less marked than during Intensive Interaction. The nursing staff who regularly worked with W. also commented that during the interaction period W. appeared happier and more willing to interact than he had been before. His increased sociability also seemed to generalise from the Intensive Interaction setting to other contexts.

Reducing Stereotyped Behaviour: an experimental analysis of Intensive Interaction

Jones, R. & Williams, H. (1998)

International Journal of Practical Approaches to Disability, 22 (2/3), 21-25.

This research study investigated the effects of an Intensive Interaction intervention in comparison to the effects of a proximity-only intervention. The focus of the study was on the decrease of stereotyped behaviour as opposed to any effects on social behaviour.

Stereotyped behaviour, such as body rocking, hand gazing and head swaying, is frequently reported in people with severe and profound learning disabilities. Previous studies demonstrated that naturally occurring interactions with staff could reduce stereotyped behaviour (Brusca *et al*, 1989; Lovell *et al* 1998; Ephraim, 1982).

The Participant: The participant, Larry, was a 35-year-old man with a severe intellectual disability. He lived in a residential hospital setting, did not use expressive language and had limited eyesight. Larry's stereotyped behaviour consisted of flapping both of his hands at high frequency.

Method & Findings: The researchers conducted two single subject experiments.

The first experiment used a proximity-only treatment in order to compare the Intensive Interaction intervention with the effects of an alternative intervention. Larry was observed in his normal environment during a baseline period in order to gain evidence on the normal levels of incidence of his stereotyped behaviour. At the intervention phase staff were asked to sit near Larry (i.e. proximity-only sessions) or sit near him and imitate his left-hand stereotyped behaviour (i.e. Intensive Interaction). The results of this experiment suggested that Larry's stereotyped behaviour was '*consistently slightly lower in the interaction conditions*' than in the proximity only sessions (and when compared to his baseline behaviour).

In the second experiment again a member of staff sat near Larry or sat near and copied his hand flapping with both his hands. From this experiment, it appeared that '*interaction had a reductive effect*' on Larry's hand-flapping when compared to both his baseline behaviour, and when engaged in the proximity only sessions.

Some Discussion: Overall, despite the positive and seemingly supportive evidence listed above, the effects were small and so not viewed by the authors as unambiguously demonstrating that Intensive Interaction is an effective intervention for reducing stereotypic behaviour. However, the authors stress that stereotyped behaviour is very difficult to reduce, and many other studies have also been unable to provide evidence of effective reduction whilst using a variety of other interventions.

Enhanced Interaction Training

Cameron, L. & Bell, D. (2001)

Working with People who have a Learning Disability, 18 (3), 8-15.

This article focused on a multidisciplinary intervention to introduce staff to Intensive Interaction and support them in using it with their own clients.

An Introduction: It has been estimated that 50% of people with learning disabilities have significant communication problems (*Scottish Executive Review of Services*, 2000). However, the diagnosis of a communication problem often masks the other (i.e. the learning disability), and staff working with learning disabled people are typically poor at communicating within their client's level of understanding (Bradshaw, 2001). It is suggested by Bott *et al* (1997) that a person's level of communication difficulties is also highly related to the frequency of their challenging behaviour.

The Initial Clinical Approach: A young man with a severe communication disorder, severe learning disability and serious challenging behaviour was referred to the authors. He communicated only through vocalisations and a few repetitive words.

The authors observed and assessed the client in his normal environment and found staff to be over-estimating his level of verbal comprehension and also the level of intent behind his actions. His attempts to communicate non-verbally were not being observed or responded to. The authors designed a programme aimed at improving staff observation and non-verbal communication. They used sensory objects to promote Intensive Interaction with the client.

The Intensive Interaction sessions resulted in increased eye contact, increased initiation of communication, more frequent vocalisations, and repetitive words said with a more communicative context. There was no challenging behaviour within the sessions. The staff, however, did not accept the progress. They were happy that the client could now express pleasure through clapping but thought that it would be seen negatively in public. The authors felt that in order for this approach to be clinically effective it would require further commitment from staff.

The Revised Clinical Approach: It was decided that the carer attitude to the client, to the possibility of progress, and to the demands that would result from changing the client's communicative behaviour would need to be addressed. The authors then saw a non-verbal young woman with self-injurious behaviour.

There were six sessions of Intensive Interaction in the client's home where one author would interact with the client whilst the staff member watched. These sessions were video-recorded and reviewed. The staff member then gradually took over the interactive role.

The Results: Due to the Intensive Interaction intervention, the client made significant communicative changes, and the staff member showed an improved ability to match their communication to the client. The improvements included increased responsiveness to non-verbal cues, reduced use of verbal language and an increase in the time given for a response. These gains lasted for over a year.

Intensive Interaction with a Woman with Multiple & Profound Disabilities: a case study

Elgie, S. & Maguire, N. (2001)
Tizard Learning Disability Review, 6 (3), 18-24.

The Participant: This study reports on the use of Intensive Interaction with a remote and withdrawn 39-year-old woman, Anna, who engaged in serious self-injurious behaviour (SIB). Anna was a blind woman with profound learning disabilities who had lived all her life within the care system. She was '*extremely emotionally and socially isolated*' and had '*effectively cut herself off from the outside world*'. She was reported as having no verbal skills and '*used very limited non-verbal communication*'.

Anna had engaged in serious self-injurious behaviour since childhood '*to the extent that her face and eyes had become extremely disfigured*'. To protect her from damaging her face and eyes further she wore plastic arm splints for 25 minutes in every hour.

Prior to the intervention, baseline measures of Anna's self-injurious behaviours were collated for six months prior to the start of Intensive Interaction. When Anna's splints were removed, she immediately started to self-injure, by eye gouging or pressing her fingers under her collarbone. During the intervention Anna was seen three times a week in her room for 16 weeks by both therapists (a psychologist and an assistant psychologist, named as the authors above), and this was carried out whilst her arms were splinted.

The sessions of Intensive Interaction contained physical contact (esp. hand holding), vocal commentary with intonation and sensitively timed vocal imitation. These sessions lasted up to 25 minutes.

The Results: There was '*an obvious increase in the amount of hand contact*' spontaneous initiated by Anna after the Intensive Interaction began. This was in contrast to her behaviour prior to the Intensive Interaction intervention when no spontaneous reaching out by Anna had been observed, despite the fact that Anna had been receiving the same amount of individual time with a therapist in the six months before the intervention (when the first author was unsuccessfully attempting to engage her in a behavioural program involving reward and tactile stimulation). This new behaviour was seen to be '*an exciting and striking response to Intensive Interaction'*.

The results also showed that Anna made more vocalisations during the Intensive Interaction sessions than when she was alone. According to the authors, '*the decrease in vocalisation when Anna was alone suggests that Anna's noises were attempts to communicate with and respond to the therapists' interactions in a dialogue type fashion*'.

However, also included in the findings was the assertion that '*there was no appreciable change*' in the presentation of the Anna's SIB (self-injurious behaviour) over time; this was indicated by the authors as being '*expected at this early stage of intervention, given that she had used self-injurious forms of stimulation for most of her life'*.

Some Discussion: Generally, the authors concluded that this study provided further evidence of the effectiveness of Intensive Interaction in '*the development of social and communicative skills*'.

From the Inside Looking Out [FILO] – an Intensive Interaction group for people with profound and multiple learning disabilities

Leaning, B. & Watson T. (2006)

British Journal of Learning Disabilities, 34, 103-109.

Method: This paper reported on a series of workshops conducted in an adult learning disability day centre. Intensive Interaction was used with 5 people (3 female and 2 male) with profound and multiple learning disabilities over 8 weeks. All the participants had very limited non-verbal communication, and all were said to avoid interaction. These sessions were videoed for 50 minutes prior to the sessions as a baseline measure with the video analysed to observe behaviours that were viewed as being important for either interaction or for avoidance of interaction, and 5 such behaviours were described: eye contact with others, object-orientated eye contact, self-stimulation (e.g. rocking, breath holding, face slapping), smiling and active avoidant behaviour (moving or turning away from others, covering the face to block the view of others).

After the assessment phase the group was run as 8 weekly 50-minute sessions with two facilitators (a Music Therapist and a Clinical Psychologist). A box was placed in the middle of the room that contained a variety of sensory items (e.g. balls, silk materials, musical chimes) which were used in interactions. In each session each facilitator would engage with clients who indicated their wish, or readiness, to do so, often building a game from an action, facial expression or sound made by the client.

Each session was videotaped and analysed for the 5 identified behaviours. One follow-up session was conducted one month after the end of the last group. In both the baseline and follow-up sessions the participants were engaged in the group sessions with staff from the day service. Four different types of groups were observed to measure the baseline and follow-up (music and movement, massage, communication, and news and views).

Results: Across the group there was an increase in eye contact, to others and to objects, signifying the participants developed a greater interest in interacting than during baseline or follow-up phase. An increased incidence in smiling during the group also indicated a higher level of pleasure during interaction than at baseline or follow-up.

A reduction in both self-stimulation and active avoidant behaviours suggested that the participants felt more comfortable interacting during the group sessions; it was thought the facilitators were able to build a better understanding of the participants. However, when the data was analysed from the follow-up session (one month later), the frequency of behaviours shown by the participants reverted back to a rate similar to that of the baseline. This appears to indicate that the mechanisms learnt in the group were not, at that time, generalised to other areas of the participants' lives.

Discussion: from the findings this study suggests that there was an increase in the ability of all the participants to sociably engage with the facilitators. Therefore, the authors concluded that this study supports the idea of **FILO** and the use of Intensive Interaction principles in working with people with profound intellectual disabilities.

The authors state a belief that Intensive Interaction can be taught to staff (over 3-4 session training course, with ongoing supervision), and that such training supports government policy '*to ensure that social and health care staff working with people with learning disabilities are appropriately skilled, trained and qualified*' (DoH, 2001, p.26).

Using Intensive Interaction - A case study

Forster, S. & Taylor, M. (2006)

Acquiring Knowledge in Speech, Language & Hearing, 8 (1), 12-15.

This study focused on Cameron, a young man with a profound intellectual disability, severe visual impairment and a physical disability, who attended a small day service. The study was conducted over 6 months with 9 service staff participating, two being interviewed regarding their reflections on the intervention.

Design: Multiple sources of data (reports, assessments, observation, and interviews) were collated to compare to the pre-intervention data, including 50 interaction reflection forms completed by staff following Intensive Interaction sessions. Follow-up data included a re-administered communication assessment (Triple C), videoed observations, and 2 interviews with staff.

Results: In 2002 (before the Intensive Interaction intervention), Cameron's communication was assessed as consistent with the pre-intentional reflexive communication stage, with some skills in the reactive stage. This indicated that Cameron was showing minimal reactions to people, activities and objects. Cameron also showed very few person engagements, a few engagements with objects (e.g. sucking objects) and was largely involved in self-engagement behaviours.

In mid-2004, the service received a consultation on Intensive Interaction and subsequently established daily Intensive Interaction sessions for Cameron. These sessions varied from 15 minutes to 2 hours (occasionally occurring twice a day). A content analysis on 50 interaction reflection sheets was completed, with the following findings being of particular note:

- There was a change in the interactions occurring separate from others to interactions occurring in the same rooms as other clients, often around programs like art or music.
- New skills were recorded e.g. more eye contact, searching for his interaction partner's hand.
- There was a shift from negative ascription of behaviour to seeing the behaviour as communicating a need, and problem solving to address that need.
- Some staff reported using the same techniques continuously, whereas other staff reported trying out new techniques to extend the interactions.

The Triple C communication assessment was re-administered 6 months later, and Cameron's recorded skills had increased to being consistent with the pre-intentional reactive stage of communication. New behaviours observed in 2005 included smiling, reacting to the voices of particular staff and beginning to show anticipation.

The two staff members who were interviewed were also video recorded during 5 minutes of Intensive Interaction with Cameron. Observations of the video showed that the staff showed positive regard towards Cameron through their words to him and their physical positioning (e.g. sitting with their face close and body oriented towards Cameron). They also used techniques such as burst-pause, whereby they would rock or pat Cameron and then pause to see his response, and they imitated Cameron's sounds to capture his interest. They also just sat with their hand on his chest or legs, making small movements to signal their presence.

The staff also reported positively on the use of Intensive Interaction, though challenges of gaining resources for staff availability and ongoing training were acknowledged.

Conclusions: This study suggests improvements in both Cameron's communication skills, and in the perceptions of staff following the intervention. These results indicate the potential usefulness of Intensive Interaction for people with profound intellectual disabilities.

Intensive Interaction as a Novel Approach in Social Care:

Care staff's views on the practice change process

Firth, G., Elford, H., Leeming, C. & Crabbe, M. (2008)
Journal of Applied Research in Intellectual Disabilities, 21, 58–69

This study reported on a 6-month Intensive Interaction intervention in 4 NHS staffed group homes in the northern England. 29 staff members were trained in Intensive Interaction and subsequently supported to implement the approach with their clients. Data was collected via researcher field-notes and semi-structured interviews, these being analysed using a grounded theory approach; the data was categorised into 7 major thematic categories that appeared to influence staff's adoption of the approach.

1. Levels of client responses: Client responses to Intensive Interaction ranged from the clearly beneficial and novel, to there being little or no response. The novel responses ranged from improved awareness of the social environment to non-task associated physical contact. It also emerged that client responses were crucial, with staff using such positive 'feedback' to decide whether or not to continue; this leading to some staff interact more with some specific clients.

2. Staff's conceptualisation of Intensive Interaction: a range of conceptualisations of the approach emerged, with some staff seeing Intensive Interaction as: a form of communication; relationship building; client led activity. The most common view was that Intensive Interaction was a means of communicating with clients through their own communicative means and at their level.

3. Staff's view of client's personal attributes, and level of understanding: Staff's views of their clients' personal attributes also influenced the Intensive Interaction. This was at times a barrier as some staff were deterministic about their client's behaviour or thought that clients might not like it.

4. Issues related to staff - client relationships: it was noted by some staff that staff-client relationships varied which potentially affected the levels of social interaction. Intensive Interaction was seen as a potential tool to build relationships with clients.

5. Philosophical issues influencing the care environment: some staff voiced concerns about Intensive Interaction being based on 'infant-caregiver' activity and felt that 'age-appropriate' methods should be favoured. Some staff also had concerns about how using Intensive Interaction 'in public' might look to outside observers.

6. Practical and personal issues affecting the use of Intensive Interaction: there were some aspects of Intensive Interaction that staff used more often, and others less so. Also, time related issues emerged; one being that Intensive Interaction was competing with other tasks for finite staff time.

7. Issues related to the momentum of approach adoption: the data indicated that, over time, there was an apparent decline in the level of interest and involvement in Intensive Interaction compared to more functional care tasks.

Discussion: The study found that some clients evidenced greater initiation of social contact, improved sociability, and increased client led interactions and involvement. The research also found staff seeing Intensive Interaction as useful in improving relationships with clients, even when they had previously worked together.

Although there were clear benefits to the intervention, there were still a number of issues that affected the levels of acceptance by staff of Intensive Interaction. Some staff felt they were already doing Intensive Interaction, but this research suggests that some of these claims could potentially be exaggerated. Also, the issue of 'age appropriateness' was still identified as an obstacle to using Intensive Interaction with some staff feeling it could potentially damage their clients' image in public.

Another issue identified was an apparent 'initiative decay' over the 6-month period in the use the approach. It was suggested that future Intensive Interaction interventions should actively plan for more sustainable methods of Intensive Interaction adoption.

An evaluation of Intensive Interaction in community living settings for adults with profound intellectual disabilities

Samuel, J., Nind, M., Volans, A. and Scriven, I. (2008)

Journal of Intellectual Disabilities, 12 (2), 111-126.

This research took place in 4 residential service for adults with profound intellectual disabilities. The study looked at 2 hypotheses:

1. That support staff could learn the principles of Intensive Interaction.

2. That Intensive Interaction would have a positive impact on: (a) the communication and social abilities of people with profound learning disabilities, and (b) the quality of relationship between them.

Four participants took part in this '*time-series multiple-baseline*' research, Alice (32), Betty (56), Clare (46) and Diana (23). The participants had no previous exposure to Intensive Interaction. The staff comprised 3 'practitioners' and 3 observers per participant. The staff training comprised a ½ day workshop, service guidelines, reflection recording forms and a support group. The Intervention involved 5 sessions of Intensive Interaction per week, of between 3 - 60 minutes (100 sessions in all).

The Results: During the study fewer than 100 sessions of Intensive Interaction were actually recorded (although this reported as due to participant ill-health).

Hypothesis 1: Video data showed that the staff practitioners learned to use mirroring of movements and vocalisation and contingent responding more. It was however noted that the frequency and extent of reflection records completion declined over time, and that the analysis showed evidence of the use of the principles of Intensive Interaction, but not of any progression. Only ½ the staff practitioners attended a support group, and that they were reluctant to watch their own videos.

Hypothesis 2(a): Each of the participants developed differently, but there was early evidence of the impact of the intervention on 'looking behaviours', although for Alice this began before the study. The ability to become 'socially engaged' and to do 'joint-focus' activity became apparent later on. Also, the development of initiation of 'social/physical contact' was noted as patchy.

For 'positive interaction' all of the participants showed improvements by the end of the intervention, whilst for Alice & Diana, 'vocal imitation' was also improved, and Clare showed improvements in 'attention seeking', 'simple negation' and 'understanding non-vocal communication'. The staff questionnaires indicated an increased expectation amongst staff that Intensive Interaction would enhance skills of participants and would gradually lead to success and maintained progress.

Hypothesis 2(b): The code applied to most practitioner data in the staff questionnaires was 'team cohesion', whereas 'benefits for staff (in general)' was applied most to observer data. Practitioners also made some comments that were coded as 'reciprocal relationship building', although the observers made none. At the end of the study one practitioner commented that '*we have learned to read each other*', and it was also noted that Betty twice sought interaction with a practitioner, when previously she would never seek out the company of others. Overall, Intensive Interaction was generally rated as 'positive' for both participants and practitioners.

Discussion & Conclusions: The findings of this study add to the Intensive Interaction evidence base but also raising some issues. Service demands which compete with Intensive Interaction may need to be addressed, and more specificity in recording formats may help practitioners to use the Intensive Interaction principles they overlook.

The findings of this study complement the existing evidence about the development of communication and sociability for people with profound intellectual disabilities through Intensive Interaction. Use of Intensive Interaction in Supported Living by novice practitioners appears to offer some potential, both for staff to learn some of the principles of the approach and for the impact this might have on the communication and social abilities of the clients and their relationship with them.

How Rapidly Does Intensive Interaction Promote Social Engagement for Adults with Profound Learning Disabilities?

Zeedyk, S, Caldwell, P. & Davies, C. (2009)
European Journal of Special Needs Education, 24 (2), 119-137.

This study investigated levels of engagement in individuals with profound learning disabilities participating in their *first* Intensive Interaction session. The authors had 2 aims: to determine how quickly observable increases in engagement behaviours take place, and to look at individual differences in patterns of change across the sample.

Method: The authors used an observational, multiple-case design to look at levels of social engagement in 10 individuals with profound learning disabilities (6 female, 4 male, aged late teens to early 60s) participating in their first Intensive Interaction session. No formal diagnoses were available; however, informal reports indicated diagnoses of autism, cerebral palsy and global intellectual delay. Randomly selected videotaped material, from an archive of Phoebe Caldwell, was analysed using micro-analytic techniques.

The Intensive Interaction sessions analysed took place in residential or day centres and lasted between 30 minutes and several hours. This study focused on the initial period of the interactions i.e. between when the session began and when the first break in interaction occurred, these sections ranging from 3 to 14 minutes. Coding look to code 3 key behavioural indicators of clients' interest in their interaction partner:

- *eye gaze to partner* ([a] away from partner, [b] toward partner's body, [c] toward partner's face)
- *bodily orientation to partner* ([a] away from partner, [b] toward partner, [c] facing partner directly)
- *proximity to partner* ([a] far/beyond touching distance, [b] close/within touching distance, [c] touching)

The emotional valence of client's actions was also coded as either: (a) neutral/negative; (b) positive; or (c) very positive. Inter-rater reliability of coding was assessed via a second blind coder; the mean intra-class correlation was 0.89, indicating acceptable levels of reliability.

Findings: Data analysis began by dividing the interaction sessions into quarters. Next, an 'Engagement Index Score' (EIS) ranging from 0 -100 was calculated for each of the 3 key social behaviours to represent the extent to which a participant was socially engaged in that quarter; an EIS score of '0' signifying that the participant had spent the entire time at the lowest level of engagement for that social behaviour, and a score of '100', meaning that the participant was constantly at the highest level of engagement.

It was found that EIS scores generally increased from section one to section four. 9 out of 10 participants showed increased eye gaze, 8 out of 9 showed an increase in proximity to partner, and 6 out of 8 displayed increased orientation to their partner. Emotional valence also increased in 9 out of 10 participants.

The EIS scores were also depicted graphically for each participant across each quarter of the Intensive Interaction session, revealing that the overall pattern of increasing engagement was subject to considerable variation. However, this secondary analysis also showed that all the participants showed increases in at least some measures and that the majority (7/10) showed increases for all 4 measures.

Discussion: This study has shown that Intensive Interaction is an effective tool in promoting social engagement with key social behaviours showing increases in the first Intensive Interaction session**.** The authors also relate their findings to the existing literature, suggesting that further work may be done to investigate exactly what conditions are necessary for improvements in engagement and why Intensive Interaction seems to be particularly useful in creating these conditions.

Can adults on the autism spectrum be affected positively by the use of intensive interaction in supported living services?

Fraser, C. (2011)
Good Autism Practice, 12 (2), 37-42.

The case study: Derek was a 67-year-old man with a diagnosis of autism and epilepsy. He lived in a supported living home (for 9 years) and sometimes displayed challenging behaviours e.g. incontinence; shouting; repetitiveness; withdrawing to his room; switching lights on & off; pulling his finger nails off. In order to judge the effectiveness of Intensive Interaction, CF (the author, a residential manager) noted the frequency of these behaviours during and after an Intensive Interaction intervention.

Results and evaluation: When first using Intensive Interaction CF felt that Derek wasn't showing any interest in her, preferring to seek out his support worker. After a few sessions the first shared interaction was a sigh, with a loud 'blowing out' sound. Derek did this and CF echoed it, and then Derek gave a very brief sideways glance towards CF. As the sessions progressed one day as CF arrived Derek immediately sighed: it felt like they now had a meaningful way to say "Hello".

During session 3 Derek used CF's name, and when CF arrived for session 5 Derek said "*Catherine*" and smiled and jumped up from his bed. During session 8 Derek used sustained eye contact for the first time.

To increase the reliability of the findings CF met with Derek's support team and asked them for their observations. One comment was that Derek had started asking when CF would next come. Other changes agreed by the team members were:

- Derek had started spending more time in the lounge than his bedroom.
- Derek had started interacting more with his fellow service-users.
- Derek had stopped flicking lights on and off.
- The time Derek spent listening to music through headphones had reduced.
- Derek appeared more patient and did not invade other people's personal space as much.

Generally, the observations from the staff team showed an increase in sociability and a decrease in behaviours that challenged (see Table 1: the frequency of Derek's challenging behaviours decreased post-Intensive Interaction).

Table 1: Frequency with which behaviours were observed by staff over a five-month period

Behaviour displayed	**Frequency per month**					
	Feb.	**March**	**April**	**May**	**June**	**July**
Incontinence	12	14	12	8	6	0
Repetitive behaviour	20	21	15	12	12	11
Agitated behaviour	4	4	2	0	0	1

Concluding comments: When evaluating this study CF stated that this research should consider any other factors which may have affected Derek's behaviour but noted that there were no changes in the level of Derek's support, or in the number of family visits and no significant changes to his health.

CF also noted that there was no control or comparison data, making it impossible to conclude that the changes were directly due to the Intensive Interaction, but CF states that this might well have been the case, and that there was no evidence to suggest that the Intensive Interaction caused any regression in his emotional state or behaviour.

Intensive Interaction: to build fulfilling relationships

Harris, C. & Wolverson, E. (2014)
Journal of Dementia Care, 22 (6), 27-30.

In this paper the authors share their experiences of using Intensive Interaction to support people living in the later stages of dementia. For EW [a clinical psychologist] Intensive Interaction is especially useful when working with people who present with challenging behaviours – a sign that needs are unmet, often due to a communication breakdown.

CH [a SLT] first used Intensive Interaction when working with adults with learning disabilities, but when she began working with people with dementia, she realised that their communication needs tended to be neglected and so started to use Intensive Interaction if she thought it appropriate.

CH researched the use Intensive Interaction with people with dementia: for the three participants in CH's research, she found a sense of relationship development over the week of the study, and also in the following weeks. Two of the participants in particular also showed signs of engagement and social interaction, such as 'looking at carer', 'vocalising', 'initiating', 'smiling / laughing', which were more prominent in the Intensive Interaction session than in the standard interaction.

For one participant Mr D (who was bed-bound) Intensive Interaction gave him an opportunity to initiate interactions to lead an interaction e.g. moving his hand to his ear as CH sang. Mr D also started to change his vocalisations: outside of the Intensive Interaction sessions he vocalised loudly and constantly (it almost sounding painful), but shortly into the first Intensive Interaction session he began to adapt his vocalisations so that they were gentler (mirroring CH's sound).

Mrs K flinched at touch and was isolated through her constant walking but then allowed CH to join her on her stroll. During sessions they shared moments of laughter and game playing as Mrs K showed CH her favoured routes and routines. As the sessions progressed Mrs K allowed CH to gently touch her arm, and this eventually developed into twirling each other's hair. Perhaps most important of all was Mrs K's husband's comment that for the first time in months she had made eye contact with him.

The study was small and exploratory, but the results suggest great potential for the use of Intensive Interaction with people with dementia.

Reflections on teaching Intensive Interaction to staff: Intensive Interaction training for staff has been about permission giving and encouragement and as such appears to have positive effects on self-esteem. As Intensive Interaction can be emotionally and physically demanding so ongoing supervision and support is essential. Ultimately a culture change in services is required where services can move away from reactive communication towards proactively seeking out ongoing dialogues and building trust.

Concerns and queries: Given the concerns of some staff, it is right to consider the suitability of Intensive Interaction for people who once had full verbal communication. Staff should be careful when responding to the changing levels of both receptive and expressive communication in people with dementia. Therefore 'personalisation' is vital i.e. communicating in a way that has meaning for the person. Concerns about the use of touch are also a common barrier, therefore for Intensive Interaction to be embraced, dementia care services need to develop touch guidelines.

Reflections on using Intensive Interaction with families: The authors note that family caregivers are very interested in Intensive Interaction, and many family caregivers automatically move into communicating in an Intensive Interaction manner having spent a lifetime already tuned into one another, delighting in all interactions.

Conclusion: The authors state that Intensive Interaction can be an approach to improving well-being in dementia, that respects personhood, adds quality to the working lives of staff, and reintroduces a bond based on fun and understanding.

Intensive Interaction Training for Paid Carers: 'Looking, Looking and Find Out When They Want to Relate to You'

Nagra, M., White, R., Appiah, A. & Rayner, K. (2017)

Journal of Applied Research in Intellectual Disabilities, 30(4), 648-660.

In this study health and social care workers were involved in I.I. training and then asked in interview about their views on using the approach. Eight carers were recruited to the study 2 to 3 years after completing I.I. training. Data was collected via semi-structured interview asking broad questions about the training, the purpose and current use of I.I.; these transcripts subjected to Interpretive Phenomenological Analysis.

Results: the analysis revealed as significant a theme of **endurance** which covered both **emotional endurance** and **practical endurance**. The analysis also indicated that the emotional component of the approach incorporates two interrelated themes of **empowerment** and **better understanding**. with the practical endurance incorporating the theme of **perceived barriers to implementation**.

Empowerment: as a result of the training the carers commonly expressed a sense of increased confidence when working with their clients. This increased confidence led to 'an improvement in their relationships, possibly due to carers feeling greater control in tackling challenging situations'. The carers also placed an emphasis on the understanding that clients should be able to 'let go and do what they would like in a safe environment'. Clients were also thought to socially initiate more often as they were 'more comfortable in their own homes and around [their] carers': and perhaps the most crucially, the bond between the carer and the client was believed to be 'further strengthened as a result of the two-way interaction'.

Realization: the endurance of I.I. seen in the 'empowerment of the carers, clients and the relationship between them', and also in the realization carers had about how care was provided prior to the II training. The carers had though that they were communicating effectively with their clients before the I.I. programme, but 'it was only after training that they realised quite what meaningful interaction was'. The carers also clearly expressed how before the training 'they knew little about their clients, despite having worked with them for as long as three years in one case'.

The further benefits of II were commonly identified as: 'better communication, happier clients and an overall positive experience', with these outcomes being seen as reaffirming the endurance of the approach. Not only was better communication developed, but this 'two-way process' was seen to benefit 'both carers and clients'.

Barriers to implementation: the carers highlighted some difficulties in implementing I.I., with barriers at a management level (i.e. a lack of consistent support), and amongst the carers themselves: e.g. not being able to recall the training (this signifying a decay in the learning involved); fear of implementing I.I. 'inappropriately'; and potential negative reactions from 'third parties'. There was also a perceived need for improved training, refresher or 'top-up' courses, on-going support and mentorship from the training facilitators. The training of all carers was also suggested 'to provide consistency for clients'.

Discussion: in an extended discussion section the authors state that 'the overarching impression that emerged from the analysis was the enduring power of II and the importance of two-way interaction'. The paper goes on to discuss related matters that include: 'Developing relationships', 'staying connected', 'limitations', 'systemic factors' and 'ongoing support' – covering these issues with broad reference to a range literature sources.

Conclusions: the authors state that 'II training supports the practice of a much-needed skill … as a way to meet [the] social interaction needs' of clients with severe or profound learning disabilities. They also call for more research on 'the effects of organisational characteristics on staff training and practice' to facilitate the use and uptake of I.I..

The Use of Intensive Interaction within a Positive Behavioural Support framework

McKim, J. & Samuel, J. (2020)

British Journal of Learning Disabilities, 49(2), 129–137.

https://doi.org/10.1111/bld.12367

This article examines the use of Intensive Interaction techniques within each phase of the Positive Behavioural Support (PBS) framework in an NHS Trust. In this study, case descriptions of individuals who displayed challenging behaviour and received Intensive Interaction are discussed. The data gathered includes recorded comments from family members and staff.

The Participants: Three case descriptions were included in this article. Each person presented with behaviours that were identified as challenging. They were all referred to the NHS Intensive Support Team (IST) and received Intensive Interaction as part of the intervention. All three people lacked capacity to consent to any intervention or publication, so agreement was sought from their network of support.

The Intensive Interaction Intervention

Jane - After four months with the IST, Jane was referred to the Intensive Interaction service. Members of the IST had used aspects of Intensive Interaction informally. Support for staff, modelling and training was given by the IST and the Intensive Interaction Coordinator in partnership. Group supervision was also conducted. Intensive Interaction was offered every 15 minutes, if Jane did not initiate, which included non-verbal turn taking (dancing and rocking), and verbal echoing. During escalated behaviour, physical contact was initiated by Jane, and firm handholding was used to reduce the likelihood of an incident.

Graham - During Graham's 20 months in hospital Intensive Interaction was formalised, with scheduled sessions and guidance from a speech and language therapist. At discharge, the PBS plan included a touch protocol and Intensive Interaction guidelines. The staff team were trained in Intensive Interaction, and interactions were videoed and analysed individually and as a group. It was crucial for staff to remain available so that interactions could be led by Graham. In addition, staff needed to be tuned in to Graham to assess micro changes in his mood, give positive non-verbal responses, with the use of touch and vocal echoing.

Lynne - Staff were trained in Intensive Interaction and autism. Intensive Interaction was used without the use of video or scheduled intervention. This involved side-by-side positioning without eye contact, tuning in, and the sensitive use of imitation. Tuning into Lynne's emotional state was crucial to lower her levels of arousal. Availability was maintained by making no demands, waiting, and positioning.

The Findings: The three case descriptions support the use of Intensive Interaction within a Positive Behavioural Support framework. Whilst the data did not allow for conclusions to be drawn about the specific impact of Intensive Interaction, comments from family stakeholders and staff suggest that Intensive Interaction has an '*important place in building rapport, improving communication and reducing challenging behaviour*'.

Jane's service manager stated that '*If it wasn't for Intensive Interaction, I don't think Jane would still be living in the community*', with Jane's sister describing Intensive Interaction as a '*saviour*'.

Part C: Other Significant Research

Getting in touch with our feminine sides? Men's difficulties and concerns with Intensive Interaction

Culham, A. (2004)
British Journal of Special Education, 31 (2), 81-88.

This paper addressed issues faced by male practitioners of Intensive Interaction (I.I.) Using both questionnaires and interviews, data was gathered from over 35 practitioners, including F.E. lecturers, teachers, day-centre staff, psychologists and speech & language therapists, all with varying levels of I.I. experience (some having only limited experience of the approach).

General Results: most practitioners reported using I.I. with students/clients with severe and profound learning disability, and a minority reported using I.I. with other groups e.g. those with sensory disabilities, emotional and behavioural difficulties, retirement home residents and clients with autism. The majority of respondents reported using I.I. as a '*vehicle*' or as a communication tool to support sessions across the curriculum. Many noted that I.I. worked very well in supporting curriculum areas such as independence skills, sensory activities, and basic skills.

Some respondents identified a difficulty with the lack of clear criteria or standards in I.I. Some found it difficult to reverse the traditional didactic teaching methods of their initial training and found communication with the student as '*an equal*' difficult. Reported gains of I.I. included improvements in communication styles, collaboration and curriculum development. One teacher noted that parents were very supportive: *'It works… parents, many of whom like to become involved with developing their child's communication, can see it work for their children.'* A third of those questioned regarded 'developing relationships' as a benefit of I.I.: *'I.I. allows me to engage with my students in a way that is uncharacteristic of my normal teaching practice, to sit back and enjoy the ride.'*

For some it was the creation of 'communication opportunities' that was the most rewarding aspect*: 'For the first time, I am able to enjoy another human being's company for its own sake.'* However, a third of respondents indicated a concern with the negative perceptions and attitudes of 'mainstream' staff with regard to the value and appropriateness of I.I.. One practitioner remarked: *'I find the reaction of others, who do not understand the individual and the procedure of communicating with them, difficult. Some people are unable to see the depth of both the students and I.I. and pass a judgement of failure or irrelevance.'*

Results pertaining to being a male practitioner: Half of the respondents reported that the issues of touch, working with female students and the fear of allegations of sexual assault have prevented them from doing I.I. One practitioner noted: *'My practice of I.I. is limited due to my fears and unease of working with female clients at the house.'* Another noted that his team had numerous staff development sessions around touch which had helped them: *'The whole business about touch… male practitioners need to feel reasonably secure, that they know what the boundaries are and that they know what the establishment rules are on permission.'*

Another issue concerned support: the level of support was seen as dependent upon individual teams, personalities and managers. A respondent noted the difficulties around peer support: *'I feel slightly uncomfortable in certain situations because of the male/female divide … but I try not to let this affect my practice.'* Managerial support of I.I. practitioners was also a concern: whilst some celebrated their manager's proactive work and support, many questioned their manager's understanding of I.I. Lack of support caused some staff distress and alienation. One therapist reported that *'Some senior managers can be dismissive of what we do.'* One male practitioner revealed that only 20% of the team they worked with were male, and another noted that many of his female colleagues looked to him to take responsibility for discipline and restraint, possibly because of his gender.

Conclusions: Although it isn't always clear what difficulties relate specifically to maleness, and what difficulties exist for practitioners of either gender, this research illustrates the need of male practitioners for further support and development in the area of I.I.

Intensive Interaction and autism: a useful approach?

Nind, M. (1999)
British Journal of Special Education, 26 (2), 96–102.

This article addressed the potential usefulness of Intensive Interaction (I.I.) for pupils whose learning disabilities are compounded by autism. Nind points out that there had been no focus on I.I. as an approach to meeting the specific difficulties and needs of learners with autism spectrum disorder (ASD). She states that the need to address the relevance of I.I. for those individuals with a learning disability and autism as a separate group has arisen for two reasons: firstly, the nature of the autistic condition - personal relatedness with others has been seen as a central impairment in the autistic condition; and secondly, much of the literature on autism emphasises an innate inability to learn from natural interactive processes.

Nind briefly discusses the range of intervention processes used with people with autism spectrum disorders, differentiating between 'special' and 'naturalistic' approaches. Whilst the challenging nature of many individuals with autism has encouraged a focus on 'special' intervention processes, such as TEACCH and Lovaas therapies, there are those who have recognised the benefits of a non-directive interactive style. The article goes on to say that naturalistic approaches do not dominate in the current climate however, where the focus remains on direct training and behavioural intervention. Nind recognises that not all practitioners in the field have shared the implicit assumption that those with learning disabilities and autism are part of the target group for I.I.

To argue the case for I.I. she draws on both theoretical and empirical perspectives. The premise that underlies I.I. is that learning to communicate is not like learning a basic skill, which can be task analysed, with constituent sub-skills taught separately in a structured programme. Becoming an intentional communicator involves learning about oneself and others, learning that we can have an effect on others and that we can share meaning (Harding, 1982). To be effective communicators, we have to *want* to communicate and have a concept of what communication is all about. Nind argues that the best and possibly only model we have which addresses the development of the desire to communicate with others is in caregiver-infant interaction. The only teaching approach based on this model is I.I.

The empirical evidence cited by Nind looked at the usefulness and appropriateness of I.I. for learners with autism. In this paper Nind considers a single case study, a series of narrative case studies and lastly questionnaire and interview data from teachers using I.I. The case study looked at an adult (Kris), who was diagnosed with autism at the age of four. I.I. was used with him over a 12-month period when he was 28, and any developments measured. Nind notes that there were specific new developments noticed in Kris, which she associates with the introduction of I.I. These included a greater interest in watching people and moulding and relaxing when cuddled.

The narrative case studies presented provide weak empirical evidence in that there were no structured observations, but they do complement the study of Kris with their rich descriptions and reflections. This section describes the attempts of staff and parents to use II with two boys, both of whom are diagnosed with autism. Both accounts discuss how I.I. was introduced, and the resulting developments from using this approach. Such developments included giving sustained attention, initiating contact and allowing others to share in activities.

The last body of evidence that Nind looked at was a study that aimed to identify examples of good practice of I.I. This study provided data looking at the views of practitioners using this approach. Questionnaires were sent to a number of special schools and units in England, looking at the usefulness of using the approach. Results from these questionnaires identified benefits of using I.I. for both pupils *and* staff. Benefits for pupils included self-motivation, improved communication and the development of relationships. Benefits for staff included improved observation abilities and feeling more positive about the children. Follow-up interviews conducted with seven teachers offered rich observations to support the questionnaire data. Nind notes an interesting pattern that emerged from the findings. Staff did not seem to be concerned about the debate as to whether an interactive approach would make it harder for those with autism to learn. Instead, the decision to use I.I. was based on an assessment of the individual child and the perception of their needs, regardless of whether they had autism or a learning disability.

Finally, Nind observes that despite the current emphasis in Special Education on the National Curriculum, interactive approaches continue to develop and be important both in the general field of learning disabilities and concerning individuals on the autistic spectrum. The article concludes that there is every reason for I.I. to be adopted as a useful and effective strategy for working with individuals whose learning disabilities are compounded by autism.

A Dual Aspect Process Model of Intensive Interaction

Firth, G. (2008)
British Journal of Learning Disabilities, 37(1), 43-49.

Since the 1980s, intensive Interaction has been employed to meet the social and communicative needs of people with severe or profound and multiple learning difficulties and/or autism. The approach, which employs naturalistic interactions with learning disabled people based on the 'infant-caregiver' interactional model, was initially developed by teachers Dave Hewett and Melanie Nind. However, in this paper the author contends that certain aspects of the approach are not universally conceptualised, and that published definitions of the approach do not necessarily advance a single consistent conceptualisation or procedural philosophy. It is also the author's view that, in the majority of cases across the multi-disciplinary community of Intensive Interaction practitioners, there emerge two general process models that describe or conceptualise Intensive Interaction.

Firstly, there is a '*Social Inclusion Process Model*'. This model advocates a primary aim of inclusively responding to a learning-disabled person's communication, however it is expressed. When alluding to this model, practitioners tend to use terminology such as '*communication*'[1], '*understanding*'[1], '*shared language*'[2] and '*connecting*'[2] to describe the process. This process model appears to be evidenced by practitioners who recount instances of an initial rapid expansion of a person's sociability and communicative practice, presumably as their latent communicative means are expressed in response to Intensive Interaction techniques.

Secondly, and subsequent to the first model, there is a *'Developmental Process Model'* of communicative skill progression and acquisition. This model espouses a need to have educative or developmental goals when using Intensive Interaction. Indeed, with such a *'Developmental Process Model'* it is any resultant communicative or cognitive skill acquisition that is the major aim of any Intensive Interaction intervention. When alluding to this process model practitioners tend to use terminology such as *'learning'*[1+2], *'developmental'*[2], and *'extending'*[2].

In what the author calls a *'Dual Aspect Process Model'* of Intensive Interaction both process models may be seen as representing differing aspects or stages of Intensive Interaction. Lying between the stages is what the author calls a transitional phase, which begins as the initial rapid expansion of interactive behaviour associated with a *'Social Inclusion Process Model'* tails off. The author also states that such a transitional phase is already described by the term *'plateauing'* (Nind & Hewett, 2nd ed. 2005, p.134). Any progress subsequent to this *'plateauing'* requires the onset of the *'Developmental Process Model'* during which a more gradual development of the learning-disabled person's communicative skills takes place.

Interestingly, across the body of published research into Intensive Interaction, shorter, generally non-educational research carried out over days or weeks, according to the author, seems to support a rapid *'social inclusion process model'* of increased responsiveness. In contrast, in those papers written from an educational perspective (carried out over months, terms or years), there are claims made that the novel or increased social responses arise out of an extended learning or developmental process. And thus, the author claims, these longer-term research studies provide evidence for a *'Developmental Process Model'*.

This paper goes on to give a broader analysis of learning theory to help describe the process through which social inclusion supports developmental progression. It is suggested that Lave and Wenger's (1991) situated learning theory of 'Legitimate Peripheral Participation' provides a good theoretical representation of how authentic engagement in collective activities (in this case Intensive Interaction) is a necessary precursor to conceptual development and skill acquisition. 'Legitimate Peripheral Participation' shows how a learner can gradually become part of a 'community of social interactors' once their emergent communicative and sociable behaviours are legitimised and responded to with Intensive Interaction. Initially the learning-disabled person's engagement in such a 'community of social interactors' might well be halting, tentative and exploratory, however, through repeated joint experience (in this case of Intensive Interaction), the collaboratively organised social activity develops greater levels of sophistication i.e. developmental progression takes place.

According to the author, the '*Dual Aspect Process Model*' of Intensive Interaction is a reflective response to his own experiences of practicing and contemplating Intensive Interaction, and it is his hope that the model may help others to identify more clearly their main purpose in employing Intensive Interaction.

Notes:

1. Terminology used associated with the use of Intensive Interaction by social care staff in semi-structured interviews during qualitative study using 'grounded theory' methodology (2005).
2. Terminology used associated with the use of Intensive Interaction by clinical psychologists in semi-structured interview during qualitative study using 'grounded theory' methodology (2006).

References:

Lave, J. & Wenger E. (1991) 'Situated Learning: Legitimate Peripheral Participation' in Bredo, E. 'Reconstructing Educational Psychology' in Murphy, P. (Ed) (1999) *Learners, Learning & Assessment,* London, Chapman Publishing.

Effective Engagement through Intensive Interaction

Sharma, V. & Firth, G. (2012)

Learning Disability Practice, 15 (9), 20-23.

This paper reviews research on the effects of Intensive Interaction on the conduct, health and wellbeing of people with learning disabilities who exhibit severe challenging behaviour, and on the wellbeing of their carers. The authors conclude that Intensive Interaction can benefit clients, carers and staff, but that research is required to encourage developments in policy and practice, and that additional staff training is needed to ensure that Intensive Interaction strategies can succeed.

The authors describe how individuals with severe and/or profound and multiple learning disabilities (S/PMLD) and/or autism may present with severe challenging behaviour, this is 'behaviour of such intensity, frequency or duration that the physical safety of the person or others is likely to be placed in serious jeopardy' (Emerson et al, 1988). Such behaviours can include, but are not limited to, head banging, punching and biting (Oliver, et al., 2003).

The authors also point to a contrasting perspective by Ephraim (1998) that there is no such thing as severe challenging behaviours, and that these are socially aberrant forms of communication i.e. 'A punch in the face' is an act of communication, although the message behind the punch may not be understood.

The paper goes on to review existing research with differing results as to the effectiveness of Intensive Interaction in reducing the severity and/or frequency of severe challenging behaviours in individuals with S/PMLD and/or autism (Caldwell, 2010; Nind and Hewett, 2005).

However, the authors mention that previous research suffers from a number of methodological limitations, such as small sample sizes (Elgie and Maguire, 2001), varying practitioner ability/experience (Zeedyk, et al., 2009), varying definitions of "challenging behaviour" and a lack of objective assessment of behaviour pre- and post-Intensive Interaction interventions (Irvine, 2001). These limitations hinder the ability to generalise findings across user groups and may also explain the lack of adoption of Intensive Interaction by learning disability services. As such, further methodologically robust research is requested by the authors.

In conclusion the authors suggest that the current body of research indicates that Intensive Interaction techniques can reduce the severity and frequency of severe challenging behaviours and improve the health and wellbeing of individuals with S/PMLD. Moreover, viewing the behaviours as a form of communication (Ephraim, 1998) suggests that carers need to 'learn the language' of their clients or service users. Thus, Intensive Interaction encourages carers to listen to and understand what individuals are saying with their body language and facial expressions.

It is also the author's view that by adopting Intensive Interaction techniques, staff can communicate more effectively with people with S/PMLD and introduce them to new worlds of social interaction.

Finally, the authors propose that further evidence of the benefits may encourage policy makers and practitioners to adopt Intensive Interaction practices, thereby enabling individuals with S/PMLD and their families to achieve a better quality of life.

Clinical Psychologists' Views of Intensive Interaction as an Intervention in Learning Disability Services

Berry, R., Firth, G., Leeming, C. & Sharma, V. (2014)
Clinical Psychology and Psychotherapy, 21 (5), 403-410.

Some Background

This explored clinical psychologists' views of Intensive Interaction as an intervention in learning disability services in terms of its theoretical underpinning and empirical support. It was also hoped that the study might illuminate significant issues influencing clinical psychologists' adoption of the approach, including the participants' thinking about the relevance of established psychological models and theories.

Overview of the Study

This qualitative study involved interviews with eight clinical psychologists from across the UK who were known to be working with adult clients with severe or profound intellectual disabilities, and to be using or advocating Intensive Interaction. The study utilised a grounded theory approach to analyse and categorise the resulting data.

Results & Discussion

All the participants were asked whether they saw Intensive Interaction as being concordant with any established psychological theories and were given specific exemplars. The models that were spoken about were attachment theory, developmental theory, Person-Centred Therapy (PCT), social role valorisation/normalisation, behaviourism, Ephraim's 'augmented mothering', attribution theory, sensory integration, psychoanalytic models, social constructionism and humanistic psychology.

Of the six participants who spoke about attachment theory, all described Intensive Interaction as being consistent with it. Under the category of 'theory', one of the specific concepts was labelled 'person-centred counselling/therapy/theory', but little material was coded there. In contrast, there was considerably more interview data categorised under the label 'the psychologising of Intensive Interaction'. This category contained statements in which the participants used psychological language to talk about Intensive Interaction rather than making specific reference to a theory or therapy.

To summarise: what the participants talked about when using Intensive Interaction and their comments about its benefits, can be best understood in Person-Centred Therapy terms; they described it as a means for establishing psychological contact.

First impression taken from the interviews was that the participants seemed to be acting out of character for psychologists i.e. they were perhaps deliberately using prosaic or commonplace language to describe complex psychological issues and perspectives.

Upon reflection, the authors realised that they themselves were not fully confident about their own understanding of the psychological underpinnings of Intensive Interaction. Being limited by the dearth of psychologically based literature on the approach, they decided to re-visit Geraint Ephraim's doctoral thesis and his subsequent publications on 'augmented mothering'. In so doing, the authors anticipated that they would find a clear theoretical rationale for 'augmented mothering' against which they might compare the conceptualisations of Intensive Interaction by the clinical psychologist participants. This expectation, however, was not fulfilled.

Finally, the authors stated that what is needed from clinical psychology is a more rigorously scientific approach involving theory development and testing via clinical case studies. Without a coherent process of theory development, and the systematic generation of an evidence base for a psychological model of Intensive Interaction, the approach is open to being dismissed as more commonplace than scientific.

The Effectiveness of Intensive Interaction: A Systematic Literature Review

Hutchinson, N. & Bodicoat, A. (2015)

Journal of Applied Research in Intellectual Disabilities, 28 (6), 437-454.

This paper considered 15 quantitative and 3 qualitative studies on the efficacy of Intensive Interaction with participants of different ages in both educational and residential settings:

In Nind's 1996 study, a multiple-baseline study with 6 adult participants, there was some evidence that all participants gained in their sociability and communication, although according to the authors these improvements were not always directly concurrent with the start of the Intensive Interaction, casting some doubt as to the cause. However, the authors state that Nind gave persuasive arguments for the link i.e. that the participants had long-standing communicative difficulties, many behaviours occurred for the first time after the Intensive Interaction began, and no other events were known to be concurrent with the improvements.

The various studies by Kellett (2000/3/4/5) were said to have unstable baselines and variability in the scores coded, thus limiting the conclusions that could be drawn. In Barber's study (2008) the extended baseline to post-Intensive Interaction measurement cast doubt on the cause of the improved sociability (and data from only 3 of 11 students was given). Leaning & Watson (2006) reported data from only 3 of 5 participants, although these did show improvements, but the missing data again raised bias issues. Samuel *et al*. (2008) reported an increase in social behaviour, but these increases were small (<5% were classed as a 'noticeable increase').

Other papers also used video, with Zeedyk simplifying the analysis, thus making it easier to see that all participants increased on their levels of 'Engagement' with Intensive Interaction The use of an ABA methodological design by Argyropoulou & Papoudi (2012) provided strong support for Intensive Interaction being responsible for increasing the number of initiations from the child participant in their study. In all three of the qualitative papers reviewed, sociability was perceived to be enhanced by Intensive Interaction; however, validity was limited in two studies by a lack of clear methodology.

According to the authors the conclusions that can reasonably be drawn from the evidence did not reflect the positive anecdotal evidence reported by practitioners of Intensive Interaction: however, as the authors point out, in a systematic review anecdotal reports are considered 'insufficient evidence', and books and dissertations are excluded due to the lack of peer reviewing.

Conclusions: according to the authors '*any conclusions [about Intensive Interaction] should be cautious due to findings being limited by unstable baselines, AB designs and small improvements*. *However, all papers reviewed found at least some increase in sociability. The research so far could indicate that Intensive Interaction may help to develop communicative abilities; however, the limitations of the studies prevent firm conclusions being drawn*'.

The limited empirical evidence did not, in the authors' opinion, support the powerful claims made by the people who were conducting the Intensive Interaction However they say that this may be due to the difficulty in conducting good quality, methodologically and ethically sound research with people with intellectual disabilities. The authors also commented that the use of video coding of social behaviours in relation to an approach like Intensive Interaction seemed potentially reductionist, and that other methods of assessment might be more appropriate.

Summary: Because the studies had clear limitations, the authors stated that they could not firmly conclude whether Intensive Interaction is likely to be a helpful for people with learning disabilities and/or autism. But, based on the studies examined in this paper, the authors offered several ways of increasing the effectiveness of the approach. These include a team-based approach and support, so that in-depth exploration of difficult issues can be a component of any Intensive Interaction.

The authors also stated that: '*to provide Intensive Interaction with the evidence base it lacks at present, the methodological quality of both quantitative and qualitative studies needs to be examined closely, and research, once finished should be submitted to peer-reviewed journals*'.

The use of Intensive Interaction with people with severe-profound intellectual disability

Weedle, S. (2016)
Learning Disability Practice, 19(9), 27-34.

This paper reviewed the academic and research literature focusing on studies of Intensive Interaction with people with a severe-profound intellectual disability. The literature search produced 18 relevant peer-reviewed papers (6 quantitative, 6 mixed methods and 4 qualitative). All the studies had small sample sizes, the largest being 18. A thematic analysis of the papers was carried out, and four main themes emerged: social engagement; the effect of Intensive Interaction on people with intellectual disability; the effect of Intensive Interaction on practitioners; barriers to implementation.

Social engagement: this theme focused on an individual's social engagement with the person implementing the intervention. The literature suggested that Intensive Interaction is most suitable for people who are in some way socially isolated or withdrawn, this being because Intensive Interaction is effective in enhancing social engagement. It was found across a number of papers that there was a clear increase in sociability compared with measurements at 'baseline'. The studies used behavioural indicators to demonstrate increased social engagement, with these indicators including eye contact, mutual activity, body orientation, proximity, etc.

Four studies measured progress in communication development. These studies found that participants initiated communications more effectively. There was also an increase in vocalisations during sessions, which could be viewed as increased attempts at communication. Following Intensive Interaction there was also a reduction in self-stimulation and active avoidant behaviours, and also behaviours such as hand biting, rocking and head banging, which were considered to be barriers to social interaction.

Effects on people with intellectual disability: taking part in Intensive Interaction was seen as enjoyable and satisfying for clients, and as a more proactive and empowering approach. The effects reported included increased client-initiated social activity, increased smiling, emotional valence, and a greater sense of well-being. There was also evidence of reduced levels distress and self-harm among children.

Effects on practitioners: the importance of recognising that Intensive Interaction involves both the client and practitioner in a mutually communicative relationship was noted. Staff experienced increased job satisfaction due to an enhanced connection with the person they were supporting. Also, the staff team felt an increased sense of team cohesion and empowerment, with staff feeling more capable of demonstrating that they cared, noting they felt Intensive Interaction gave them more 'permission' to touch or spend time with their client.

It was also noted that there was a greater sense of connection between staff and clients. This relationship development was evidenced in increased reciprocal interactions with clients, which also increased the motivation of staff. There were however some practitioners' concerns, particularly male practitioners being worried about issues of touch with female service users, including concerns about sexual assault allegations. This left some staff members unwilling to work physically close to clients, noting that it made them feel uncomfortable.

Barriers to implementation: there were reports of some environmental constraints which made the use of Intensive Interaction more challenging i.e. time constraints, staff shortages, and pressurised environments. Some practitioners were reported as having initial doubts about Intensive Interaction because they did not anticipate the positive outcomes: however, after they witnessed positive effects, the resistance was overcome.

Conclusion: this review provides an improved understanding of the benefits and limitations of using Intensive Interaction. Overall Intensive Interaction was seen to increase a clients' social engagement, strengthen their relationships and positively affect their overall well-being. However, there are still some barriers, particularly concerning initial resistance from staff teams.

Teaching Intensive Interaction to paid carers: using the 'communities of practice' model to inform training

Rayner, K., Bradley, S., Johnson, G., Mrozik, J., Appiah, A. & Nagra, M. (2016)

British Journal of Learning Disabilities, 44 (1), 63-70.

The acquisition of skills through observation before moving into active participation suggests learning is '*not a process of … internalisation of knowledge by individuals, but as a process of becoming a member of a sustained community of practice*' (Lave, 1991). This 'community of practice' approach was applied to a 6-week I.I. training programme for carers comprising 3 training workshops, peer support and formal supervision. This study evaluated the training by identifying key themes emerging from the participants' experience of the programme and their subsequent use of the techniques.

Method: Participants were 2 carers and one home manager who had no previous I.I. training. After the I.I. workshops they took part in semi-structured interviews about their training, about the I.I. approach and about the response of their clients and colleagues. The data transcripts were subjected to *Interpretative Phenomenological Analysis* - a qualitative research approach.

Results: The analysis revealed a master theme of '*insight*' which covered carer and client change and development; 3 other themes also emerged: (i) *investment,* (ii) *transformation,* and (iii) *challenges.*

i) Investment: The staff conveyed feelings of personal development from practising I.I. and thought they now responded to more than just the functional basics: *'The training ... I think it makes you feel quite emotional ...'.* Staff felt they were gaining in both competence and confidence: *'the more of the sessions I went on the more fluid it became, the more easier, the less inhibited I felt...'.* Staff found it difficult to articulate what they were experiencing and suggested that in order to understand the change you have to actually see it: *'... all I can liken it to (...) the light bulb goes on and the communication come out* (*...) you can't put it into words you've got to be there'.*

ii) Transformation: staff described a transformation in clients: *'It's just amazing how it just the conversation's … is getting more and more each week'.* Also, there was a shift in staff attitudes towards the training: *'initially … I thought "well that's not very much, that would be great just an hour or two" but it was an intense hour or two that you could get a lot out of and learn a lot from'.* The staff also changed their view of what makes an effective intervention and adjusted their expectations of what is a good outcome *'that does seem to calm him down, it might only be for a few seconds but it works*'. The I.I. also enabled staff to think in a more person-centred way.

Supervision was valued by the staff; it raised self-confidence and helped staff to develop connections with clients, with staff also experiencing higher levels of job satisfaction. A consistency within the working environment was also evident, with staff intent on forming productive relationships with colleagues and clients alike. Staff also expressed a need for all staff to be trained in I.I.

iii) Challenges: Staff evidenced initial resistance as they could not at first see the benefits of I.I., however this soon changed as they saw the results for themselves. Like their clients, staff also experienced things that affected them profoundly: *'I just thought ... I just couldn't believe what I was seeing ... I've worked with this gentleman nearly four years and I have never seen him do that'.*

Discussion: overall in this study, the adoption of I.I. brought about many positive experiences for the carers, with a profound shift in beliefs, progress and the potential for development. With I.I. staff found relationships more meaningful and gained a deeper understanding of their clients, their co-workers and themselves. The study evidenced how I.I. can promote a higher quality of person-centred care, improving wellbeing, self-worth and quality of life. The study also suggested workers felt nurtured by supportive supervision, evidencing how a '*community of practice*' can foster a working culture which promotes respect and inclusion for clients.

The wider implications of the study point to the ability to transform attitudes in care staff, regardless of length of time in service (up to 20 years for this study's participants) or how regimented a service is. The profound effect on the staff could be seen in the shift in the language they used to describe the approach, their use of it and the results they have seen with their clients.

Examining the impact of a city-wide Intensive Interaction staff training program for adults with profound and multiple learning disability: a mixed methods evaluation

Clegg, J., Black, R., Smith, A. & Brumfitt, S. (2020)
Disability and Rehabilitation, 40(2), 201-210.

This study of day service staff focused on answering three questions, these being:

1. What did staff think about using the approach in their daily work with people with PMLD?
2. What challenges did staff experience in implementing Intensive Interaction?
3. What support do staff need to implement Intensive Interaction?

The city-wide training: Seven staff were trained to become 'Intensive Interaction coordinators' who went on to deliver Intensive Interaction training to 120 staff working across the city day centres. Staff with a particular interest in the approach were then invited for further training and mentoring by a coordinator who supported them to develop their practice, video their sessions and prepare them to have their work appraised by a panel of other coordinators - if the panel considered their understanding of the approach was sufficient, and they had an aptitude for delivering it, they were signed off as 'Advanced Practitioners' (AP). Such APs were then expected to support their colleagues to use Intensive Interaction, as well as use it themselves.

The Method: This study had 2 phases: Phase 1 was a survey looking at the outcomes of Intensive Interaction training on the work practices of 54 staff supporting people with PMLD from day services in a northern UK city. The survey asked questions on the participant's role, their experience working with people with PMLD, their training, their use of Intensive Interaction, and any barriers they saw in using the approach. Phase 2 had 29 participants who were interviewed to more fully investigate their experiences and perceptions of using Intensive Interaction.

The Results: The city-wide Intensive Interaction training had a significant impact on the levels of staff knowledge of the approach, their work practices and on their perceptions of people with PMLD. 96% of the participants reported using Intensive Interaction, with 76% also wishing to use the approach with even more people. Using Intensive Interaction was seen to enable staff to build better relationships with their service users, giving them more confidence and greater job satisfaction. However, some challenges in the implementation of the approach were identified.

The implementation of Intensive Interaction was reported to be about more than just having adequate and consistent staffing - there was an identified need for a consistent core team of highly skilled and enthusiastic staff (the APs) who are trained in and committed to Intensive Interaction; the 'Advanced Practitioners' role was viewed as vital in maintaining staff's focus on Intensive Interaction across the day centres. Support from managers and dedicated time to reflect on the use of Intensive Interaction were also valued. The completion of Intensive Interaction session and attainment records was also seen as important, as was external support from speech and language therapy services.

Some implications for future service wide Intensive Interaction interventions:

- Training staff in Intensive Interaction promotes social inclusion for adults with PMLD.
- With Intensive Interaction training staff can facilitate and then identify changes in the interactive and communicative behaviours of adults with PMLD.
- Care staff need continued support and training to sustain their use of Intensive Interaction with adults with PMLD.
- Services need to reduce the barriers of staffing, management and organisational structures to enable care staff to sustain their use of Intensive Interaction for adults with PMLD.

In conclusion: This study provided robust evidence that a city-wide Intensive Interaction intervention can be effective in increasing both the social inclusion and developmental progression of people with profound and multiple learning disabilities.

Intensive Interaction and discourses of personhood: A focus group study with dementia caregivers.

Heap, C. J. & Wolverson, E. (2020)
Dementia, 19(6), 2018-2037.

https:/doi.org/10.1177/1471301218814389.

Introduction: According to the authors of this paper, due to 'the medicalisation of dementia … dehumanising social practices and attitudes are enabled, and reinforced by medical discourses of dementia which have become societal discourse … Within the medical societal discourse, people with dementia are excessively medicated.' Also, 'Intensive Interaction assumes that all interaction partners can be meaningfully engaged [and] … can offer an alternative to medicalised discourses (and by proxy, the dehumanising practices enabled by such discourses).'

Study Method: Paid staff from two residential care homes attended an Intensive Interaction training day. These caregivers took part in 2 focus groups before and after the Intensive Interaction training. Transcripts of the focus groups were then analysed using the method of Critical Discourse Analysis, an approach which 'relates discourse to social power'. The focus group discussions were based on 5 themes identified as missing in medical/societal discourse: 'personhood', 'communication', 'embodiment', 'reciprocity' and 'empathy'.

The Results: Before the Intensive Interaction training carers engaged in 'medical discourses of loss, non-communication and lack of personhood'. Carers also talked about a lack of resources (time and staff), with job role/hierarchy being important in allowing time (and permission) to interact with residents. "Being with" people with dementia was framed as 'inactivity' ('sitting', not 'working') or 'a luxury, and therefore separate to paid work within 'an industrial model'.

After training, caregivers engaged in 'discourses of communication and personhood'. Intensive Interaction reframed "being with" people as a part of 'doing work'. Staff viewpoints significantly shifted with carers talking about going 'into the world' of the person with dementia, and they also thought that 'Intensive Interaction would improve relationships'. Intensive Interaction was also seen to 'legitimise and explain existing relational and creative practices'. However, there were worries that managers might be critical of the approach 'unless they had training to understand the discourse (e.g. 'mirroring' not 'mimicking')'.

Some Conclusions and Discussion: According to the authors medical discourses of dementia reinforce 'a status quo whereby interpersonal interactions are devalued in dementia care, and professional 'knowledge' (thereby professional power) is privileged over relationships'. The medical model also frames a person's problems as being of the 'individual'. Therefore 'if distress, loneliness and lack of occupation are framed as an illness, rather than a legitimate response to one's circumstances, society does not have to change. This fits well with an individualistic, industrial model of society, whereby medical and social care institutions are focussed on economic efficiency'.

However, Intensive Interaction may enable paid caregivers to 'access person-centred discourses' (including 'hopefulness') and develop related practices aimed at improving a person's quality of life. However, without wider systemic change in dementia discourse, Intensive Interaction training will be limited in its effectiveness. The adoption of Intensive Interaction requires 'support from management, organisational structures, and wider society'.

In conclusion, according to the authors 'suggestions for future research into dementia care can be orientated around one basic principle: honouring the personhood of people with dementia. This is with a view to providing person-centred, ethical care – by improving communication, enhancing relationships and providing care from a place of collaboration and shared humanity.'

A qualitative study of the practice-related decision-making of Intensive Interaction practitioners

Firth, G., Glyde, M. & Denby, G. (2020)

British Journal of Learning Disabilities, 49(2), 117-128.

Background: this study looked at the sometimes conscious and sometimes intuitive decision-making processes of Intensive Interaction practitioners, generating a rich description of how practitioners make judgements when deploying Intensive Interaction strategies with people with severe or profound learning difficulties and/or autism.

The Method: this research followed a "Template Analysis" qualitative methodology using semi-structured interviews with 13 experienced Intensive Interaction Practitioners (all having completed the Intensive Interaction Coordinators course run by the Intensive Interaction Institute). The participants included: speech and language therapists, parents, teachers, residential care staff and managers, and a clinical psychologist.

Results: The multi-faceted decision-making process of practitioners when applying the general principles of Intensive Interaction included:

- **Intuitive (unconscious) decision making** when '*attuned with*' or '*tuned-in to*' or '*going with the flow'* with their communication partner … combined with:
- **More conscious reflective considerations** of a number of significant practice related issues, both during and after sessions of Intensive Interaction.

Such decision making fell into distinct stages related to the progression of the social engagement:

- **Before engaging with the person** with consideration being given to: personal, diagnostic and historic factors; behavioural, sensory or demand avoidance issues; environmental issues; etc.
- **When initiating with the person** with consideration being given to: gaining attention; how to make themselves socially 'available' and meaningful to the person; following, not leading; etc.
- **During Intensive Interaction** with consideration being given to issues of: creating mutual enjoyment; the use of the 'Fundamentals of Communication'; proximity; tempo, rhythm & timings; demand and/or arousal management and control; the use of objects; symbolic language use; multifaceted and conscious 'in the moment' practitioner reflection; social skill repertoire development; intuitive responsiveness developing greater acuity with experience; reflective and observational skills developing acuity with experience and mentoring; etc.
- **When disengaging with the person** with consideration being given to: issues of practitioner or service time limits; gradual reductions in responsiveness; service user disengagement; etc.
- **After Intensive Interaction** with regard being given to issues of: recording, esp. video recording; reflections 'after the event'; peer support and mentoring; and general social learning; etc.

Some verbatim comments:

- *'I generally tend to go in non-verbally … outstretch my hands towards that individual, get down to their eye contact level'*
- *'You do have to be very tuned in … for every aspect of them, their breathing, their physical tone, not just their facial expressions'*
- *'Anybody only gets that [improved Intensive Interaction practice] through reflection and looking at the videos and chatting about it with your staff; nobody's an expert, we all need each other's eyes to support each other'*

The main conclusions: Intensive Interaction practice develops most effectively through a reflective cycle of: prior deliberation on some aspects of practice and some pre-emptive environmental action; trial and error experiential learning during engagements; 'in the moment' decision making (often intuitively but at times consciously considered); combined with post engagement collaborative reflection on both individual practice and general Intensive Interaction theory.

Intensive Interaction: an evaluation of two different recording formats

Shearer, K. & Parkhouse, C. (2020)
Good Autism Practice, 21 (2), p. 23-32.

The authors of this paper, two experienced Intensive Interaction teachers, wanted to study ways to '*identify and record the effects of its [Intensive Interaction's] use within the school*'. Therefore, they trialled two recording systems within their UK special school. These were:

1. **A 'Diary Entry'** (**DE**) system: this often being referred to as a 'Session Sheet' (see Ref 1). The Diary Entry (DE) was chosen because of 'its strong reflective element' and 'its unstructured nature'.

2. **The 'Engagement Profile'** (**EP**) as developed by a CLDD* research project and designed to increase the curricular engagement of complex learners (see Ref 2). In this study the **EP** was used without an associated scale to create a simpler qualitative recording tool. This tool records outcomes in 7 categories: Responsiveness, Anticipation, Discovery, Persistence, Initiation, Investigation, Curiosity.

The study was carried out over one term, with 20 teaching staff (most new to Intensive Interaction). The staff attended an initial training session with follow-up study workshops. Informal in-class support was given throughout the term. 10 staff were given a **DE** format to use, the other 10 the **EP**.

THE FINDINGS

Use of vocabulary & language within the recording tools: The study found that the greatest factor influencing the quality of descriptions in either system was the staff's own vocabulary. Also, specific actions were more often reported in the EP, although EP entries tended to include less context and ascribe less 'meaning' to any interactions. The EP system seemed better at evidencing progress e.g. behaviours initially classified as 'initiation' later being recorded as 'anticipation'.

Variability in the quality of the data: The DE records were more variable in quality than in the EPs, ranging from very detailed, to sparse or even negative. DE records often included conjecture or opinion, whereas the EP prompted staff to write basic observations. However, the EP did not encourage much in the way of staff reflection, although it did require staff to input data into a particular engagement area, making them think about a behaviour in several ways.

Greater mention of context in the Diary Entries (DE): In some cases the DEs gave more detail about the context for an interaction, with comments on interactions outside of the session also more likely e.g. '*starting to interact more at home with brother...*'. Also, DE users sometimes adopted a longer, more interpretive or narrative style e.g. '*She's the most responsive I've ever seen her*'; some such entries being 'descriptive but not analytical'.

Discussion: both recording tools appeared to enhance the importance of Intensive Interaction and encouraged staff reflection and analysis, with staff becoming more able to identify small or subtle steps of progress.

School pressures: This study also showed the difficulties of including Intensive Interaction in a school setting. Some ways to 'safeguard' Intensive Interaction were identified:

- ensuring that pupils have EHCP targets focused on Intensive Interaction
- having dedicated spaces (e.g. soft play areas/sensory rooms) and time slots
- for staffing to be organised to facilitate one to one working with pupils
- to create a culture of recognising and respecting the Intensive Interaction process
- to ensure that any recording tool used does not require too much staff time

Some concluding comments: according to the authors, neither the DE nor the EP provided any quantitative or comparative data. The data produced was often lengthy, requiring it to be read 'as a case study' to understand any progress made. However, the authors felt that the value lay in encouraging staff 'to assess, review and reflect' and as such, it should become 'a professional development tool as much as an assessment tool'.

Ref 1: Mourière, A. & McKim, J. (2017*) Integrating Intensive Interaction: developing communication practice in services for children and adults with severe Learning Difficulties, profound and multiple Learning Difficulties and autism*. London: Routledge.

Ref 2: Carpenter, B. & Egerton, J. (2011) *Engagement profile and scale: The Complex Learning Difficulties and Disabilities* research project: Developing meaningful pathways to personalised learning,* DoE.

Improvised music to support Intensive Interaction for children with complex needs: A feasibility study of brief adjunctive music therapy

Strange, J. (2021)
British Journal of Music Therapy, 35(2), **43–52**
DOI: 10.1177/13594575211028038

This quantitative research study investigated the *'Triadic Support of Interaction by Improvisation'* in two special schools in the UK i.e. the application of music therapy as a brief adjunctive therapy for children with complex needs who are receiving Intensive Interaction.

'Triadic Support of Interaction by Improvisation' is defined as the process when a support worker (or Learning Support Assistant/Teaching Assistant in schools) interacts directly with the learner using Intensive Interaction, whilst a Music Therapist improvises music to enhance the interaction via a musical 'commentary' on its interactive and emotional form.

Such a triadic musical 'commentary' is seen as a concurrent 'therapeutic adjunct', and was, the author concludes: '*felt to be effective in encouraging and developing interaction between [a] teenager and teaching assistant, with some of the developments enduring in the months after music therapy ceased'*.

The Method: A small randomised controlled trial (RCT) was carried out in two special schools in the UK. The study set out to measure changes in child-teaching assistant interactions between the 4th and the 12th of 12 weekly sessions of Intensive Interaction. In each of the two schools, a control group of four children with complex needs received Intensive Interaction only, and an experimental group of four children additionally received improvised music in sessions 5 through to 8.

To gather comparative quantitative data, experienced Speech and Language Therapists (SLTs) made blind assessments on the level of interactivity evident between the staff and children from video recordings of sessions 4 and 12. These SLT assessors used an adaptation of an instrument developed by an NHS learning disability service for recognising progress across an Intensive Interaction intervention ('*A Framework for Recognising Attainment in Intensive Interaction*', Firth, G., (2015) LYPFT).

The Findings: The experimental group at one research site showed significantly enhanced interactions ($p = 0.02$) between the control group and the 'triadic musical' intervention group. However, no statistically significant difference between the control and intervention groups was discernible at the second school. However, there were mitigating factors evident at this second school potentially impacting the effectiveness of the triadic musical support.

According to the author, this study offers provisional proof of concept, provided environmental factors identified as impacting results at the second site can be resolved in future studies.

Staff experience of the implementation of Intensive Interaction within their places of work with people with learning disabilities and/or autism

Berridge, S. & Hutchinson, N. (2021)
Journal of Applied Research in Intellectual Disabilities, 34(1), 1-15.

Method: A computerized search was conducted in Oct 2018 across several research databases (CINAHL, PsycINFO, ERC and MEDLINE) to identify and review the qualitative literature which explored staff experiences of the implementation of Intensive Interaction in their workplaces. Several inclusion/exclusion criteria were used, and the UK NICE Checklist for Qualitative Studies (2016) was used to critically appraise the included 'qualitative' studies. Thematic synthesis was then used to develop a 'meaningful synthesis of these data' from the 9 included papers*. The 'workplaces' included schools, day services, an acute medical hospital and residential settings. Staff sample sizes ranged from 3 to 29, most of whom were previously unfamiliar with Intensive Interaction.

Results: the thematic synthesis of the 9 studies generated 3 higher-order themes: 1. Personal Doubt, Discordance & Discomfort, 2. A Turning Point and 3. Needing Implementation at All Levels.

Personal Doubt, Discordance & Discomfort: Some staff identified Intensive Interaction as not fitting with their former working methods, at times feeling uncertain in their own abilities or in the approach. Some staff were uncertain of how to '*do*' intensive interaction: '*I don't see the clear steps of what I should do…*'. Intensive interaction was also seen to contrast with views on '*age-appropriacy*' and some worried about getting '*too close*' or losing previous levels of '*control*'. Interestingly, Intensive Interaction also appeared to make staff more aware of their own emotions and the emotions of those they worked with, changing the quality of their working relationships e.g., they started to feel more empathetic, or even '*loving*' towards clients.

A Turning Point: 'A turning point' was often identified during implementation when staff felt more positive about the approach, this generally being when they saw the benefits of the approach. Staff expressed feelings of '*surprise*' or were '*amazed*' when they saw the outcomes for their clients/pupils. Subsequently, staff appeared to think more about clients/pupils and "*treat them as an individual[s]*". Staff also gained more confidence and, therefore, more enjoyment from using the approach; this being directly related to the kinds of training and support they were given.

Needing Implementation at All Levels: Staff described 'practical barriers' in their workplace e.g., the need to work with many others, often with inadequate staffing levels. The number of staff 'duties' could also be overwhelming: '*I've got quite a heavy workload anyway … and (it's) getting bigger … so sometimes you just think 'no, no I can't do anymore'*. Some staff described feeling '*self-conscious*' in front of those unfamiliar with Intensive Interaction, although one felt the training 'gave them permission' to use the approach: '*Now … everyone is doing the same thing. I just felt relieved*'.

For successful implementation, '*really good teamwork*' was important, as were '*consistency'* and *'collaborative communication'*. Ideally, there should be '*a core team of consistent, enthusiastic staff who are trained in and committed to Intensive Interaction*', if possible, with some 'advanced practitioners' to support systematic implementation. 'Top-down support' from managers was also seen as important, as was 'making the approach official' e.g., *'… as a part of the pupil's IEP*'.

Discussion & Conclusions: In summary, the authors recommend that:

- Training should provide opportunities for experiential learning, adapted to specific workplaces.
- Staff be allowed time and a reflective space when implementing and using Intensive Interaction.
- An ongoing, whole-organizational approach should be taken during implementation.
- Future studies should present clear and consistent data, account for context bias and examine broader influences regarding the implementation of Intensive Interaction.

[*Included papers = Clegg et al. (2018); Jones & Howley (2010); Sri-Amnuay (2012); Zeedyk et al. (2009); Bodicoat (2013); Firth et al. (2008); Leaning (2006); Nagra et al. (2017); Rayner et al. (2016)].

Mothers' Experience of Intensive Interaction

Berridge, S. & Hutchinson, N. (2021)
Journal of Intellectual Disabilities, 26(2), 391–406.

This study looked at six mother's experiences of using Intensive Interaction with their children with intellectual disabilities and/or autism.

The Participants: Six participants took part in the study and were selected through purposive sampling. The researchers intended to recruit participants of all genders, however only those who identified themselves as their child's mother were recruited. Participants were required to have knowledge of Intensive Interaction via observing others using Intensive Interaction with their child, attending a training course, or by information provided by a healthcare or educational professional. The length of time over which the mothers used Intensive Interaction with their child (8 children; 6 boys and 2 girls) ranged from 5 months to 11 years.

The Method: Participants were recruited through two methods. Firstly, parents received information about the study from staff in SEN schools in the Yorkshire and Humber region of the UK. Interested parents then contacted the researcher. Alternatively, a Speech and Language Therapist who ran Intensive Interaction workshops for parents distributed information to attendees.

A semi-structured interview was conducted with each participant. All participants signed a consent sheet. Interviews lasted between 45 and 90 minutes, and were audio recorded onto an encrypted laptop and transcribed for data analysis. Once the paper had been written up, the participants were given the opportunity to read the paper, to assess the credibility of the researchers' interpretations, and whether the interpretations made were congruent with the participants experiences.

Data Analysis and the Findings: Data was analysed using Interpretative Phenomenological Analysis, with the analysis yielding four superordinate themes ('the connection', 'bittersweet', 'fighting for support', and 'challenging underlying low expectations and stigma') with 10 subordinate themes.

From this study it appeared that Intensive Interaction was experienced as normalising and natural, as the approach was reminiscent of parent-infant interactions. For some mothers, Intensive Interaction was effective when used to foster a sense of connection. One mother stated that '*Intensive Interaction, brought her* [their child] *into the world*'. Mothers described connection as increased eye contact and proximity, processes necessary for a secure attachment.

However, this research indicated a lack of external support and information regarding Intensive Interaction for these mothers. A participant commented that information on Intensive Interaction wasn't '*as accessible as you would hope*'. The research suggested that schools appeared to be the main other setting in which Intensive Interaction was conducted. Despite this, participants had varying experiences on support gained from school, with one mother commenting that '*communication is a lot better than we could ever have imagined*', whilst another stated, '*I don't know what they do at school*'.

However, the study evidenced the importance of maintaining good dialogue between parents and the school. Finally, researchers found that low expectations and stigma were barriers to successful interaction, as these factors contributed towards others expecting little of the individual, thus reducing options for communication and social inclusion.

Evidence of mutual non-verbal synchrony in learners with severe learning disability and autism, and their support workers: a motion energy analysis study

Glass, D. & Yuill, N. (2024)
Frontiers in Integrative Neuroscience. 18:1353966.
DOI: 10.3389/fnint.2024.1353966

Introduction/Background: Research suggests neurodivergent people are less likely to synchronize their movements with a partner in comparison to 'neurotypical' individuals; synchrony being apparently disrupted by discomfort with one's social surroundings, and synchrony associated with rapport and perceived social unity.

According to some research some autistic people need more time to habituate to new environments than non-autistic people due to sensory processing differences, with some researchers indicating that the social differences associated with autism and other neurodivergences may be caused by synchrony deficits. A client-led approach, Intensive Interaction (II), facilitated by Learning Support Workers (LSW) is seen as an approach that can establish balanced and reciprocal interactions by following the learner's lead.

Research Methods: The balance of synchrony in 10 LSWs (7 female, 3 male) and 10 learners with Autism and Severe Learning Disabilities (1 female, 9 male) aged 19–22 years were examined in a special education college where the learners had previous Intensive Interaction experience. One learner was diagnosed with Williams Syndrome (WS) and one with Worster-Drought Syndrome (WDS). Individuals with WS, WDS and Autism show similarities in social cognition and communication (Clark et al., 2010) which means approaches to support social interaction and communication may be shared (Asada & Itakura, 2012).

Each learner participated with a different LSW. 8 were mixed gender pairs and 2 were matched-gender pairs. Motion Energy Analysis (MEA) automatically quantifies dynamic movement at a micro-level from recorded video files (Ramseyer, 2020). Using MEA the researchers assessed the extent to which each partner acted as a leader or follower during moments of close synchrony. Approval was provided by University of Sussex Sciences Cross-Schools Research Ethics Committee, and informed consent obtained from the participants' legal guardians/next of kin.

Results: Overall, LSWs and learners showed higher than chance synchrony. There were no differences in the extent to which each partner led the moments of synchrony, or the amount pairs synchronized with zero-lag (where there was no delay between each partners' movements).

Discussion: The findings revealed an equal balance of leading and/or following in the LSW and learner pairs and zero-leg synchrony. This demonstrates both partners consistently adapted their movements to their partners to facilitate synchrony. Previous literature has shown mixed-neurotype and early interactions can have clinical and broader social and cognitive developmental benefits.

The dominant claim in synchrony literature i.e. of a social motor synchrony deficit in autism is tentatively challenged by the findings of this research, evincing that synchrony can be present in mixed cross-neurotype pairs when in relaxed and engaging conditions. This research also shows there is the potential for client-led, movement-based approaches to support smooth interactions across neurotypes in naturalistic settings.

Some other Intensive Interaction and related articles of interest:

Barber M. (2007) 'Imitation, interaction and dialogue using Intensive Interaction: tea party rules', *Support for Learning, 22, 124–30.*

Firth, G. (2006) 'Intensive Interaction: a Research Review', *Mental Health and Learning Disabilities Research and Practice,* 3 (1), 53-58.

Firth, G., Poyser, C. & Guthrie, N. (2013) 'Training care staff in Intensive Interactions', *Learning Disability Practice*, 16 (10), 14-19.

Fotoglou, A., Moraiti, I., Stergios. V., Ashley, P. E., Vogindroukas, I., Demeter Speis, P., Papantoniou, S., Chrysouli, K., Karabatzaki, Z. & Stathopoulou, A. (2023) 'Sociability: The key to sensory processing disorder'**,** *Brazilian Journal of Science and Technology*, Vol. 2 (No.1), 82-97

Hewett, D. (2007) 'Do touch: physical contact and people who have severe, profound and multiple learning difficulties', *Support for Learning*, 22 (3), 116.

Kennedy, A. (2001) 'Intensive Interaction', *Learning Disability Practice*, 4 (3), 14-15.

Nind, M. (2003) 'Enhancing the communication learning environment of an early years unit through action research', *Educational Action Research*, 11 (3), 347-63.

Nind, M. (2000) 'Teachers' understanding of interactive approaches in special education', *International Journal of Disability, Development and Education*, 47 (2), 184-199.

Nind, M. & Cochrane, S. (2002) 'Inclusive curricula? Pupils on the margins of special schools', *International Journal of Inclusive Education,* 6 (2), 185-198.

Nind, M. & Hewett, D. (1988) 'Interaction as Curriculum', *British Journal of Special Education*, 15 (2), 55-57.

Nind, M. & Kellett, M. (2002) 'Responding to learners with severe learning difficulties and stereotyped behaviour: challenges for an inclusive era', *European Journal of Special Needs Education*, 17 (3), 265-82.

Nind, M. & Powell, S. (2000) 'Intensive Interaction and autism: some theoretical concerns', *Children and Society*, 14 (2), 98-109.

Rezayi, S. (2022) 'The Effectiveness of an Intensive Interaction Intervention Program Based on Sensory Approach on Challenging Behaviors of Children with Autism Disorder', *Journal of Exceptional Children*, 22(3), 111-122.

Samuel, J. (2001) 'Intensive Interaction', *Clinical Psychology Forum*, 148, 22-5.

Samuel, J. (2001) 'Intensive Interaction in context', *Tizard Learning Disability Review*, 6 (3), 25-30.

A Glossary of Useful Research Terms

- BASELINE PHASE: the period in research before a new intervention is started.
- BASELINE ASSESSMENT: an assessment of someone's presentation prior to the start of an intervention in order to be able to evaluate the effects of the intervention.
- DATA: information gathered and organised for the purpose of analysis.
- EFFECTIVENESS: how well an intervention works in practice i.e. real-world conditions.
- EFFICACY: the therapeutic effect of a given intervention found in controlled conditions.
- EMPIRICAL DATA: data produced by 'theory-neutral' observations or experiment.
- EVIDENCE: everything that is used to determine or demonstrate an assertion.
- EXTRANEOUS VARIABLES: factors other than the 'independent variable' that can alter the outcomes and confound or confuse any analysis of the impact of an intervention.
- GENERALIZABILITY: how well research findings and conclusions from a study conducted on a sample population can be applied across the population at large.
- IMPLEMENTATION: the stages and process of putting something into practice.
- INTER-RATER RELIABILITY or INTER-RATER AGREEMENT: the degree of agreement among research data-raters i.e. a measure of how much agreement there is in the ratings given by different observers or data collectors.
- INTERVENTION PHASE: the period in research when a new approach has been introduced for evaluation purposes.
- OBJECTIVE ASSESSMENT: detached and unbiased assessment, not distorted by personal experience, feeling or knowledge.
- OBSERVATION: the process of looking methodically and precisely at what is going on in a certain set of circumstances; doing so in an impartial and un-biased manner.
- OPERATIONALISATION or IMPLEMENTATION: the stages and/or process of putting something into practice.
- QUALITATIVE METHODS: methods that use verbal accounts and description, rather than numbers, to gather evidence or data.
- QUANTITATIVE METHODS: methods that gather numerical data, and usually then to use statistical techniques to manipulate and create meaning from the data.
- QUASI-EXPERIMENTAL DESIGN: a 'positivist' research design for testing hypotheses while recognising the naturalistic context and impossibility of controlling all variables.
- RESEARCH ETHICS: rules and standards concerning the ethical conduct of research.
- RESEARCH EVIDENCE: evidence accumulated through structured observations of identified phenomena, carried out in defined or controlled conditions.
- THEORETICAL CONCERNS: issues or considerations related to the conceptual understanding and framework of an approach or intervention.
- TRIANGULATION: in research, the use of data or evidence from more than one source to increase the validity or reliability of any findings.
- VIDEO ANALYSIS: structured analysis of previously recorded video footage to see exactly what happened e.g. after a session of Intensive Interaction.

The papers included in this document were summarised with the generous help of many people, including:

Lydia Bickley, Natalie Clark, Gemma Denby, Karen Egerton, Graham Firth, Ella Goodworth, Ben Green, Petya Grigorova, Nick Guthrie, Tendayi Guzha, Stephen Howell, Mankaran Kaur, Catherine Leeming, Ajay Nar, Alex Puchala, Rochelle Rose, Anna Sampson, Vishal Sharma, Helen Simpson, Alex Straughan & Kate Tangri.

Disclaimer: this document does not necessarily contain an entire and exhaustive list of all the published research papers reporting on the outcomes of Intensive Interaction.

The document is updated on a yearly basis as other research papers and summaries become available.

If you are aware of any published Intensive Interaction research papers not included in this document, please contact **Graham Firth** (Intensive Interaction Institute: Lead for Research and Publications) at:

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