

**Title: The effectiveness of the TEACCH approach in supporting the development of communication skills for learners with severe intellectual disabilities**

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## **Abstract**

This research focused on whether a TEACCH-based approach could be effective in helping to develop the communication skills of older learners with Severe Intellectual Disabilities, to enhance their ability to communicate, to enhance their abilities to live independent lives, and to take part in discussions about their future. A TEACCH based approach was implemented in a class in a special school, attended by 6 students, aged over 16, all of whom had Severe Intellectual Disabilities. Using a pre-post quasi-experimental design P-Scale data and IEP targets were used as measures of progress for communication skills. These were supplemented by regular researcher observations of the communication skills of the students. Staff were also asked to regularly measure the frequency and effectiveness of communication skills. Parents were also interviewed. P-scale and IEP targets indicated some progress being made across the 2 years. The results from research and staff observation were more striking however, indicating the development of frequent and effective communication skills across the 2 years. Importantly, these communications were occurring spontaneously, rather than being the result of conversations initiated by staff. Parents had noticed changes in their children's communication, but remained concerned about their prospects for the future. This research showed that a TEACCH-based method can be effective in developing communication skills in learners with Severe Intellectual Disabilities. The extent of the effectiveness remains unclear however, as the school-based methods for assessing progress for these learners (mainly p-scales) remain problematic.

**Keywords:** Severe Intellectual Disabilities, TEACCH, Communication Skills, Transition

## **Introduction**

This research looks at developing communication skills for individuals with Severe Intellectual Disabilities (SID). The Salt report (DCSF, 2010) acts as a starting point for the current research, as it acknowledged that there has been a lack of focus on the needs of students with SID. The research is also informed by recent changes in policy in England, which serve to reaffirm the importance of listening to the voice of children with special

educational needs when making important decisions about them. This research will focus on developing communication skills in adolescence (post 16), to develop the skills needed to live as independently as possible.

### **Communication skills of learners with SID**

Communication is a fundamental skill, but it is also a complex one. Feiler & Watson (2010) state that children with severe intellectual or physical disabilities and communication difficulties tend to experience marked problems expressing their desires and needs. Bayes, Heath, Williams, & Ganz (2013) highlight the importance of communication skills for autonomy, while Johnson, Douglas, Bigby, & Iacono (2012) highlight the importance of communication skills to developing relationships. Grove, Bunning, Porter & Olsson (1999) state that individuals with SID are dependent on others interpreting their attempts to make themselves understood, as well as having a low level of their own intentions, a limited ability to use formal communication, and a tendency to passively acquiesce to suggestions made by others. Research focusing on transitions for this group has uncovered a number of issues. Giving learners an opportunity to voice their own opinion in making life choices has been highlighted, but research has unfortunately shown that often they are given little say in transition meetings (Smart, 2004, Carnaby, Lewis, Di Martin, Naylor & Stewart, 2003).

### **How can Communication skills be taught?**

When considering how to teach learners with SID, the first major issue to be addressed is the consistent finding that learners with SID are often passive – waiting for others to instigate an interaction. Bunning, Smith, Kennedy, & Greenham's (2013), research showed that in special schools, teachers dominate the interactions, and are the main initiators. This continues a theme identified by Ware and Evans (1986), who found that adults frequently did not respond to the attempts of pupils with SID to communicate. For Anderson (2006), this can be explained in part by the issues presented by learners with SID; their preverbal communication can be brief, infrequent or overlooked; communication signals may be

specific to an individual and difficult to interpret; some behaviours may appear random and it is difficult to identify which behaviours have communicative value.

In a literature review focusing on the interaction between intellectual disability nurses and adults with intellectual disabilities by Martin, O'Connor-Fenelon, & Lyons (2010), two key themes were highlighted: mismatch of communication ability, and knowledge of communication. The theme of mismatch is most striking, with Martin *et al* (2010) noting the frequency with which staff failed to adjust their communication level to match the abilities of patients, failing to use non-verbal communication, or indeed simply not paying attention to attempts to communicate nonverbally from the patients.

Much of the research discussed in this section so far has highlighted the difficulties faced in teaching communication skills. However, there have been reports of successes. Nind, Kellett & Hopkins (2001) for example focus on the positives of using intensive interaction (derived from the nurturing style found in caregiver-infant interaction), and how it can improve the quality and quantity of learner's communication.

## **TEACCH**

TEACCH stands for Treatment and Education of Autistics and related Communication Handicapped Children. The inclusion of communication in the title serves to justify the focus on this particular approach. Siegel (2000) notes that TEACCH is an approach which requires a clear understanding of a learner's needs in order to be able to teach them effectively, similar to the point made by Martin *et al* (2010). In addition to this, it uses continuous structured interventions, environmental adaptations, and alternative communication approaches, as necessary (Schopler, 1994). Mesibov & Shea (2010, p. 572) note that a key component in TEACCH is "supporting self-initiated use of meaningful communication". Although TEACCH is mainly directed at those who are specifically diagnosed as being autistic, there is some research that focuses on those with SID. Walton and Ingersoll's (2013) literature review suggests that the TEACCH program can be effective in increasing social contact and socialisation. Kossyvaki, Jones & Guldborg (2012) conducted a piece of

research looking at how to increase and improve spontaneous communication in autistic children. The research was conducted in a class where a range of teaching methods, including TEACCH, and in particular Intensive Interaction were employed. The research focused on the adults' interactive style, and whether training focusing on how the adults in the classroom interacted with each child. This training was found to improve child-initiated communication in the classroom. This provides a starting point for the current research, which similarly uses TEACCH as a basis for the teaching that occurs in the classroom.

## Methodology

The aim of the current piece of research was to explore whether the programme of teaching, focusing on specific elements of communication, was effective in increasing communicative competence for students with SID. This research took place across 2 school years. Porter and Lacey (2004) note that a common approach to research on teaching strategies is to adopt a quasi-experimental approach. Issues around the size of the group and the lack of ability to use a control group limit the ability to use a more powerful experimental approach for this particular group of learners. The pre-test post-test single group design was the least problematic design available for this research (see table 1).

**INSERT TABLE 1 HERE**

A total of 6 students were engaged in the research. The group comprised of 5 females, and 1 male, all of whom were over the age of 16 at the start of the project. The pupils taking part in this research have been grouped together by the school, at the start of the 2012/13 school year, because they had particular communication needs. A Speech and Language Therapist was heavily involved in teaching the class, supported by a graduate teacher, in addition to teaching assistants. Parents were also approached to participate in interviews at 2 key points in the research. However, due to a range of issues, 4 interviews (3 at a year in, and 1 more at the end of the research) were conducted.

For the current research, a range of instruments is used (see table 1) at different phases of the research process. School data was used to provide a baseline, stretching back 2 years prior to the intervention commencing, which would also be available as a post-test measure. School data included annual progress reports, statements, IEPs, and speech and language therapy reports, which provided rich details about the abilities and needs of the students.

In addition to this, 15 observations, each of which lasted 2 hours, were conducted by the researcher. These observations captured the spontaneous communications initiated by students in the class. This included observations in the classroom, varying across day of the week, time of day, and lessons/subjects being covered. In addition to observations in the classroom, the observer was present for a range of community based activities including

visits to supermarkets, volunteer work, etc. The staff also regularly assessed the frequency and effectiveness of communication of each student.

Finally, a brief note is provided regarding ethical considerations. When collecting data with vulnerable groups, as students with SID are generally classified, a number of precautions need to be taken to ensure that the research is conducted in an ethical and transparent manner. The staff had a number of discussions at before selecting the students who would be part of this research, to ensure that their participation was, in their judgement, in the students' best interests. The students in this research are over the legal age of consent (16), and therefore, reasonable attempts have to be made to inform them of the nature of the research, in order to be able to ensure that they are happy for the research to be conducted. In order to do this, the researcher worked with the staff at the school to prepare a clearly worded statement, indicating what would be involved in the research, and telling the students about their right not to take part if they did not wish to. This was read out to students who it was felt would be able to understand, and give consent. In addition to this, all parents were sent consent letters, informing them of the nature of the research, and asking for their consent.

## **Findings**

The evidence in tables 2 and 3 show that gains in assessed ability to speak and listen, where apparent, are modest. There are also examples of decreases in level (for example MR in table 9). Whether this represents a real decrease, or simply a different assessment of ability from the staff who had been assessing these students prior to 2012-13 is open to interpretation, although concerns have previously been raised about consistency in assessment of p-scales, (Ndaji & Tymms, 2009, QCA, 2007). **INSERT TABLES 2 & 3 HERE**

Table 4 below shows the IEP targets from the year prior to the current project in relation to communication, alongside the IEP targets during the 2 years of the research project. These targets vary greatly from student to student. All student show progress in their IEP targets, varying from generalising skills, to moving on to new skills.

**INSERT TABLE 4 HERE**

A range of findings emerging from the study is now presented.

### **Teaching Methods used during the research**

An important element of the approach to teaching and learning in the classroom is that the day is broken into a series of events rather than 'lessons'. In practice this means: an increasing emphasis on practical tasks, less emphasis on worksheets, more one to one teaching, and activities described using "real world" language (e.g. "shopping" rather than "community access").

The teaching methods also influenced how the classroom was set up. The setup is informal, with no timetables on the wall, and no "designated teacher seat". Students sit around one central group of tables, with no whiteboard used. The tables were regularly moved out of the way to create a large space, for example during periods of physical exercise. The teaching space included an additional small room with a window, visible from the main room, that could be used for withdrawal work or private conversations.

In the room being used in the second year of the project, the classroom space was L-shaped, and included a kitchen area and table for lunch, as well as a more informal area with sofas, and an open carpet area which could be used for recreational purposes.

The manual used by the staff to inform teaching draws on three main approaches. These approaches were developed based on the TEACCH manual.

### **Adult lead approaches**

These are the approaches where the adult is actively directing the student in some way. The idea is that the student does not have the skill to express the function or does not have the skill to use a particular means and will benefit from being made consciously aware of the actions that they need to take. This awareness will help recall of these actions at a later time in a similar situation. Specific strategies that fit into this include: Demonstration, Rehearsal, Role Play, Repetition, Fading Physical/Language/gestural/attention prompts.



These were only used when necessary, as the main intention was to encourage students to instigate communication wherever possible.

### **Environmental manipulation approaches**

The strategies in this approach are more difficult to observe as they consist of the adults changing the environment without making the students aware that they are doing so. Changing the environment includes the adults changing what they are doing as well as physical changes to the room or outside area. The rationale is that the student does have the skill but lacks the motivation to communicate. The change in environment ideally acts as a motivator for the student to request something that they can normally access. This range of approaches was the most relevant in terms of trying to develop spontaneous communication. An in-depth example is that of 'vignette bowling', as described below.

Student KH frequently chose to play a game of bowling by himself. He would produce the symbol for bowling, and be given the ball and a set of pins. He would set up the pins, move away, and throw the ball at them to try and knock them down. This activity allowed KH to self-occupy. He was capable of playing with other children/adults, and taking turns, but it was more common for him to play on his own. This meant that sabotage was needed – removing elements, or hiding things when the student was not looking. This was done in an escalating manner. First, the adult would hold the ball behind their back and expect KH to draw their attention by touching their shoulder; then he would be expected to ask for the "ball". This proved successful, as he would quickly go to the nearest adult to draw attention and then request "ball" (verbally, or sign for "help"). The next step would be to hide the ball elsewhere, so that KH would have to look around, and then ask an adult for help to find the ball. The student found this an interesting experience, and seemed to enjoy this as an additional element of the activity. He would look at the nearby adult when playing, often with the beginnings of a smile on his face, to check where they were, and if they were likely to take the ball while he was occupied resetting the pins.

## **Modelling approaches**

The strategies in this approach could be described as a combination of adult lead and environmental approaches. Although the adult is not directing the student it is assumed that the student may not have the skill. The rationale behind these is that the students do not have the skill but do have a tendency to copy in the way that typically developing children copy care givers or other people they are motivated by. The clearest example of this would be in physical exercise lessons where specific physical activities are modelled, and copied by students. The physical exercise lessons often involved paired work, which provided directed opportunities for the students to interact with their peers in a purposive manner.

## **Interaction Style**

The final element in relation to teaching is the principles that were used to underpin how staff were expected to interact with the students. The general aims were to try to maintain and increase student self-esteem and confidence. A key term used in the manual provided to staff was that staff should demonstrate “unconditional positive regard” to students, both verbally and nonverbally.

- Giving specific praise, using encouragement
- No shouting, no telling students off in front of others
- Listening fully to opinions even if you do not agree with them
- Communicate with individuals rather than as a group

These would, it was hoped, contribute to a positive learning environment, where learners would feel supported and encouraged in their attempts to communicate their needs, and develop these communication skills.

## **Impact on the frequency and effectiveness of communication skills.**

Table 5 shows the extent to which both staff and the researcher agreed whether the 6 students demonstrated the different types of communicative skills that were the focus of this research, based on researcher and staff observation. There was an 88% level of

agreement with most of these indicating forms of communication observed both by staff and by the researcher.

**INSERT TABLE 5 HERE**

### **Frequency of Communication Types**

Figure 1 shows the frequency of communications where students asked for help. This could either be nonverbal (e.g. using a “help” symbol or sign), or verbally asking for help. There were increases in frequency for this for all but one student, who was doing this consistently from the start. It is worth noting that for student TM, this form of communication could be considered a notable gap, as the information in table 5 indicates that this student already showed a capability for more “complex” forms of communication. **INSERT FIGURE 1 HERE**

In contrast with figure 1, the frequency of communication that involved seeking information (figure 2) was much less frequent, with high levels of frequency for this form of communication only seen consistently by 2 of the students across the 2 years. **INSERT FIGURE 2 HERE**

For the other forms of communication set out in table 5, there are gains for many students across the 2 years, though there remains great variation across students for the different forms of communication.

### **Effectiveness of Communication Types**

Having looked at the frequency of different forms of communication, the next stage is to try to assess the extent to which these attempts to communicate were deemed effective by members of staff. Figure 3 shows a good level of consistency in the effectiveness of ability to communicate a request which could be nonverbal (using a symbol), or verbal (“crisps”, or “I would like some orange please”) **INSERT FIGURE 3 HERE**

Differences between individuals begin to emerge when looking at students' ability to seek information (figure 4). This type of communication is markedly absent in 2 students. It is important to note that these 2 students are the least verbal of the students, though it is not appropriate to say that all nonverbal students do not demonstrate this type of communication. Student KC showed a marked increase in effectiveness to seek information across the 2 years of the study, with student NS showing a similar, though more modest increase. **INSERT FIGURE 4 HERE**

Again, for other forms of communication, there were also rises in effectiveness across the 2 years, though again there was great variation across students.

### **Parent Views**

Three important themes that were covered in the interviews with parents were: communication skills, improvements in communication, and the reasons for improvement.

Each student had different communication skills, and parents differed in the area of communication that they considered the most important. – For example, NTs' parents focused on her being able to interact with others in regular situations, such as in supermarkets. KC's father on the other hand was more wary when discussing the prospect of KC talking to other people – *“when I'm out with her she expects me to do it, and to be quite honest I'm quite nervous about her going up to strangers anyway”* (KC's parent). An underlying issue for parents was the need to understand the child in order to be able to decipher what they are trying to communicate.

It was heartening to hear from parents that they had noticed changes in their children's communication skills over the course of the research project. TM's parents for example stated that she had become more “chatty”. The parents of NT note an increased self-confidence, so that she does not have to be reliant on her parents. For KC's father, an important change has been KCs' increasing ability to communicate, through sign language and other ways.

Where improvements were noted, a number of different reasons were given. NT's parents note a number of potential reasons for changes in NT's communication skills. One important element noted was how important it was to have a good teacher. For TM's parents, the opportunities to practice are a very important element:

*"I think what helps TM is practicing things a bit like rote learning or a bit parrotlike, as the initiating conversation thing, she's only got better at that because we are half making her, but now she is doing it more voluntarily, so, practice practice practice sort of thing with that."* (TM's mother)

## **Discussion**

### **Improvements in communication skills**

The findings are quite striking – while p-scale data and IEP targets suggest modest development over the 2 years, observational data in many instances seems more positive. This may be due to issues around the p-scales (Nind & Hewett, 2012) More striking measures of progress came from staff and researcher views of which types of communication the students were capable of linked to measures of the frequency and effectiveness of these forms of communication. These measures, which occurred at multiple points across the 2 years for observation, and once per term for staff data, provide a powerful microscopic view of changes in the pattern of communication that these students were employing. Importantly, this captures not just what the learners were capable of, but also whether they demonstrated these forms of communication regularly, and whether they were deemed effective, and therefore likely to be understood by adults not familiar with the learners. It is important that these communication skills have been used consistently in a variety of settings outside the classroom as part of the research. The improved skills, particularly in relation to seeking information, and expressing feelings, could play an important part in the learners' ability to take part in discussions about their future. These improvements were noted by parents who were all happy with the progress their children

had made, whilst still having worries over the next steps their children would take. Having raised the issue of where these students will go next, the variation in parents' aspiration when talking about their children was striking, echoing the findings of Smyth & McConkey (2003). Hopes were raised in relation to being able to lead independent lives, and being able to communicate with adults.

### **Teaching Strategies**

This research has provided some further evidence that TEACCH may be helpful for children whose diagnosed condition is not primarily one of autism. The general TEACCH approach, including a focus on the environment, seems to be effective in creating opportunities for learning. The largest strength of the TEACCH approach as seen in the current research is its flexibility. Rather than there being a universal curriculum that every student should try and fit onto, TEACCH provides a range of approaches. The results highlight the importance of indirect teaching approaches, as they were used during the course of the research, as opposed to the more traditional adult-led approaches. Environmental manipulation approaches and modelling seemed to be successful in eliciting spontaneous communication from the students. These approaches to teaching are necessarily idiosyncratic, and dependent on the students' abilities and interests. They also seem to depend on the staff having a very good level of knowledge of the students, something which clearly was built up over the course of the two years.

The findings indicate that this approach was successful in getting students to initiate more, with over 600 instances of spontaneous communication across 15 sessions observed. This perhaps provides the clearest indication of how the classroom environment differed across the 2 years – the staff in the school were encouraging, and responsive to students' attempts to communicate. There is no doubt that “unconditional positive regard” was very important in creating an environment which allowed this to happen. There is likely an important overlap here with some of the concepts underlying intensive interaction (Nind & Hewett, 2012), which should be explored further.

## Future research

Looking to the future, the current research suggests a number of possibilities for future research. First, more empirical research is needed in relation to TEACCH, across a wider range of needs, taking into account that the students taking part in this research were selected by the school, implying that the TEACCH approach may only be helpful for a select group of learners with SID. In addition, the current research was hindered by the lack of valid scales for the assessment of educational and communicative competence in learners with SID. While this issue exists, it is unlikely that compelling quantitative evidence will be produced to support the use of any particular teaching approach for this group of learners.

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