

Why is it beneficial for children with Autism Spectrum Disorder to participate in social communication intervention?

Abstract

The research carried out in this project will examine the importance of children with Autism Spectrum Disorder (ASD) receiving support with social communication in school. It is focused on the findings from two primary school settings in Wales. Both prior and current research will be considered and evaluated, providing a deeper understanding of the benefits and possible limitations of social interventions. Purposive sampling will be undertaken with the sample size incorporating eight children, their parents and their class teachers. There will be various methods used to collect the data including observations of the children during and after the social communication intervention, interviews with the teachers and questionnaires sent out to the parents. The use of triangulation enables different perspectives to be considered when analysing the effect the intervention has on the children's social skills. Considering data from numerous sources challenges consistency of the findings and provides validity of the results collected. The research project will keep in line with ethical considerations such as participants in the study giving assent and parents or carers giving consent, with the right to withdraw at any time. All the details of the study will be disclosed to the participants so they know exactly what it involves, why their participation is necessary and what will happen with the data once it has been collected. The ethical considerations that they will abide by are published by the British Educational Research Association (BERA) (2018). The participants confidentiality will be respected with the data held securely, complying with the Data Protection Act 2018 and the researcher will be open, honest and transparent throughout the study.

Literature Review

The research projects rationale is to provide an overview of how social communication groups and interventions benefit children with ASD. According to Brentani *et al.* (2013) ASD can result in repetitive behaviours as well as social interaction, language development and communication impairments. It is a complex neurobehavioral condition. Macdonald (2014) believes that Autism affects each child differently and the challenges they face vary greatly.

Many children with ASD experience difficulties with social communication and language delays which can affect daily functioning, making it harder to form relationships.

Barnett (2018) points out that systematic intervention in social skills is important for disabled children, to ensure that the interactions that take place during play are beneficial. However, Paul and Sutherland (2005, cited in Barnett, 2018) maintain that in early childhood settings there is inadequate focus on social communication for children with ASD, even though the early childhood years are an important time for social development. Appropriate intervention should be given to enable them to gain social interaction skills.

Welsh Government (2015) and Welsh Government (2022) say that social development is important within the foundation phase and these skills are broadened through experiential learning. Children should be given opportunities to learn to compromise, build relationships and have the confidence to work and play co-operatively. Also, understand the consequences of actions and words and have respect for other people's needs. Welsh Government (2022) maintains that skills developed through languages, literacy and communication scaffold learners to appreciate other people's viewpoints, build positive relationships and express themselves. Children need the ability to communicate effectively by using language as it is a life skill.

According to research carried out by Hong, Shaffer and Han (2016) based on Reggio Emilia inspired learning groups and the affect they have on relationships and communication skills for children with and without disabilities, data showed that four out of five boys developed increased communicative attempts. The sessions focussed on listening, questioning and engaging in conversations. The more sessions attended resulted in the children partaking in more communication exchanges. Hong, Shaffer and Han (2016) state that Reggio Emilia places importance on integrating disabled children, promoting the value of each group member and respecting differences in people. Welsh Government (2016) points out in their inclusion guidance that Special Educational Needs should be quickly identified to ensure that appropriate intervention strategies can be implemented.

Bejarano-Martin *et al.* (2021) say that centred on a pilot study focusing on preterm children with ASD and the **effect** of participating in focused intervention on social and communication skills, the results were positive. Most participants significantly improved their socio-communication skills, language and cognitive development. No differences were displayed between full-term and preterm children with ASD.

Pound (2014) maintains that Vygotsky believed children gain language through social interaction. They infer situations by considering facial expressions, body language and interpreting the context of the words used, their reactions are based on this. However, Cashin (2020) believes that social and communicative reciprocity is challenging for autistic people. The communication difficulties may be displayed at verbal and non-verbal levels. There may be an absence of or reduced eye contact, less intonation in their voices and they may not use gestures and facial expressions when communicating.

St Pourcain *et al.* (2018) say due to results of a study, there is a common genetic overlap with social communication difficulties and both ASD and schizophrenia. However, the overlap in genetic factors between social communication impairments during development and ASD lessened with age. These polygenic linkages appear as distinct developmental profiles, they do not indicate a genetic predisposition shared by these clinical conditions.

Bruner (1986, cited in Metsamuuronen and Rasanen, 2018) believed that language is used to communicate, construct realities and differentiate between and order things. From this perspective, cognitive linguistic functions like differentiating, connecting, ordering things, as well as building realities, can be regarded as universal strategies for human brains to preserve and manage information, stories, and experiences. The cognitive-linguistic operations present a barrier because, while they are universal, they are language and syntax specific.

According to Hiles (2018) Maria Montessori created the Montessori method which concentrated on practical life, academic life and social skills with the intent to support pupils within the learning environment and create a sense of permanency. The method is adapted to meet the needs of every pupil giving them confidence to work at their own pace. Kolbe (2019) and Bruno, Scott and Willis (2018) state that special

education teachers should have a broad awareness of special education policies and procedures, including being aware of interventions for effective educating.

Methodological Considerations

Shortcuts TV (2018) and Bhardwaj (2019) state that sampling is when a relatively small group of people are selected to partake in a study out of a large population. Representativeness is how much the sample reflects the target population and generalisability is how much the data collected can be applied to the target population. Researchers feel they can generalise if the sample is more representative.

According to Newby (2014) it is cheaper in both money and time to sample when carrying out a research project. It is a useful way of gaining information quickly and it would be too costly to reach out to the whole population. It is also not possible to contact everyone within such a large population. Sampling is a practical alternative to this.

The sample selected is a purposive, non-probability sample consisting of eight children, the parents and their class teachers. This sample type has been chosen because it focuses on the purpose of the study which is based on children with ASD and the benefits of receiving intervention in social communication.

Bhardwaj (2019) points out that purposive sampling is also known as deliberate and judgemental sampling. An advantage of this sample type is that desired results can be produced due to direct communication with the intended audience. Also, because the samples chosen will be good respondents for that specific study, real time findings will be acquired as members will have relevant knowledge and comprehend the issue well.

The sampling methods used in this research project are classed as mixed method research ranging from interviews and observations to questionnaires, resulting in both qualitative and quantitative results. The observations and interviews will be carried out in the primary school in which the staff being interviewed work and the children being observed attend. This will be done in two schools to compare findings.

Elements are used from both qualitative and quantitative research when using a mixed methods approach. Qualitative research is used to obtain opinions and

experiences, it is used to comprehend scenarios and cultures. For the combined capabilities of mixed methods research capturing statistically grounded data (quantitative) with the colour of detail-rich qualitative research, both methods are frequently partnered up. (Hai-Jew, 2015).

Nolan, Cartmel and Macfarlane (2013) believe that when conducting small-scale research projects qualitative research is useful. The research can focus the attention on experiences of the participants and the meaning of them. They can be recorded in detail and carried out in authentic settings. The researchers role in the research is acknowledged because it can have an impact. Bell and Waters (2018) state that non-numerical data is commonly used in qualitative research and broad research questions can be answered with the aim to focus on a smaller range of issues as the research progresses. Qualitative researchers are more interested in understanding people's perspectives of the world. They debate if social facts exist and whether a scientific approach can be applied when dealing with people. However, Hopkins (2014) points out that some people argue that qualitative research is invalid due to non-scientific methods being employed in its analysis.

Newby (2013) maintains that quantitative approaches can be described as experimental, objective and appreciate the empirical observation of cause and effect. A quantitative researcher needs the research question to be specifically phrased as a hypothesis and conclusions are based on numerical evidence. Walker and Solvason (2014) states that quantitative data collection consists of primarily numerical data and it is quite straightforward. Quantitative methods can be described as epistemologically objectivist.

Triangulation was used in this research project. Triangulation is when a researcher can focus on links between qualitative and quantitative approaches whilst analysing evidence based on different paradigms. (Walker and Solvason, 2014). According to Flick (2018) triangulation involves researchers considering different perspectives when answering a research question which can be proven by different methods or theoretical approaches. Both should be linked. Furthermore, it refers to merging various types of data against the background of theoretical viewpoints applied to the data. As much as feasible, these perspectives should be regarded and implemented on an equal basis. Creswell (2003, cited in Nolan, Macfarlane and Cartmel, 2013)

and Newby (2014) maintain that triangulation can strengthen validity and reliability. Three strategies can be used in this approach; sequential which is when one method is used to augment the result of another method, concurrent which is when a thorough analysis can be acquired by combining qualitative and quantitative research and transformative which is when the data is viewed through a theoretical lens. However, a limitation of triangulation is that it restricts the study participants to the people that can partake in both methods, resulting in the spectrum of eligible participants being narrowed down. (Carter *et al.*, 2014).

The first research method that will be discussed is the use of questionnaires. These were sent out to the parents electronically to provide an overview of how beneficial they feel social communication intervention has been to their child and the outcomes of it. According to Bartram (2019) when given a short amount of time to collect large amounts of data from broad groups of respondents, questionnaires are useful. The standardised questions can generate large data sets enabling researchers to statistically evaluate and analyse the representation of data. Questionnaires can be informative when the research aims to capture a sense of whether groups of people agree or disagree on an issue. However, Denscombe (2014) points out that there is risk of a non-contact bias which is when the survey systematically encourages the inclusion of certain groups of people. Also, a non-response bias through refusal which is when a survey design discourages certain individuals from responding.

Wyse *et al.* (2017) believes that survey questionnaires should be tested with the target audience, before being deployed. Three methods that may be used to do this are cognitive interviews, pilot testing and expert reviews. Cognitive interviews can affect the validity of the survey. Also, leading questions must be avoided as it aids judgement. When forming the questions for this research project the question stems were carefully considered, using both the positives and negative of a word for example 'satisfied' and 'dissatisfied' ensuring the question does not influence the respondent (Wyse *et al.*, 2017).

Using the internet to distribute the questionnaires was beneficial. Denscombe (2014) states that internet surveys save time as there should not be delays when receiving answers or delivering the questions. Postal surveys are costly due to packaging, printing and posting, therefore online questionnaires save money. Lastly, the data

processing is quicker and it is a more environmentally friendly method of conducting research.

Next, the interviewing research method will be evaluated. According to Leighton (2017) when people respond to interview questions, mainly qualitative data is collected. It is commonly collected by open-ended constructed responses, handcrafted images or by means of their natural language. It often includes self-reports and personal views in oral form. Cohen *et al.* (2018) maintain that interviews are an effective method to compare data collected from other research techniques, exploring and validating issues already highlighted, enriching the research and adding further insights.

Winwood (2019) believes that if permission is granted, recording interviews is an effective way to evaluate the data gained due to being able to focus fully on furthering discussion and asking questions. It also enables them to watch it back and familiarise themselves with the content. To ensure the data is stored securely it should be on a password-protected computer.

The method chosen for this research project is a semi-structured interview. Silverman (2017) and Sharp (2017) state that a semi-structured interview is when the interview has a schedule that is created prior to it taking place, which can be used as a general guide when conducting the interview with the freedom to gain clarification of an answer by asking supplementary questions. Winwood (2019) believes that due to the flexibility in semi structured interviews the validity of the response may be questioned. However, a rapport can be built between the interviewer and the interviewee when using this approach which is useful when discussing some topics. It is more likely that participants will reveal their opinions if the interviewee shows a genuine interest in their responses.

Nevertheless, there is risk of the halo effect taking place during interviews. Nicolau, Mellinas and Martin-Fuentes (2020) point out that the halo effect is a cognitive bias in which participants construct opinions about a product attribute based on their positive or negative predisposition towards another attribute.

The third research method to be analysed is observations. According to Sharp (2017) the main aim of observations is to watch and listen to children, whilst collecting detailed information examining their interactions, actions and social

behaviours in detail, by observing rather than asking them. Also, ensuring an acceptable level of standardisations is maintained. Walker and Solvason (2014) say that researchers need to have a clear objective of what they aim to gain from carrying out the observation. The observations carried out in the project were semi-structured. Sharp (2017) and Wyse *et al.* (2017) maintain that semi-structured observations have a clearly defined agenda for what will be observed, making it easier to manage, organise, analyse and record. However, there is room for adaptability depending on the circumstances. Semi-structured research approaches are often used with practitioners on intervention projects to outline that observed differences are sometimes linked to differences in outcomes. The observer partook in non-participant observation. Papatheodorou, Luff and Gill (2013) point out that non-participant observation is when distance is maintained while observing with a neutral view. They can take place in naturalistic settings and focuses on objective recordings. Baker (2006, cited in Rozsahegy, 2019) maintains that to avoid interrupting or influencing an activity, non-participant observers often remain stationary which can result in aspects being misheard, missed or only partially seen.

Roethlisberger and Dickson (1939, cited in Papatheodorou, Luff and Gill, 2013) states that the Hawthorne effect is also known as the Observer Effect. This can take place when observing children, it is when children change their behaviour because they are being watched. Behaviours may be observed that are not typical of each child and would not take place if the observation was not being carried out. (Papatheodorou, Luff and Gill, 2013).

One method that was not chosen for this research study was Q-methodology. According to Rhoades and Brown (2019) Q-methodology is when participants place statements on to a grid on an inverted pyramid, sorting them based on their perspectives on each statement. The participants decide if they agree or disagree with the statements and it is the individuals perspective that is important. Walker, Lin and McCline (2018) point out that the Q-methodology process that is undertaken by researchers is not easy to implement or access. Rodl, Cruz and Knollman (2020) state that a limitation of Q is the generalizability is limited. Sample sizes are small and the viewpoints reflected are those of the participants included. It cannot be presumed that the representative perspectives mirror those of non-sample individuals.

Ethical Considerations

Before any research is carried out, it is important to gain both informed consent from the parents and assent from the children. Green (2012, cited in Hodgkin and Beauchamp, 2019) believes that when adults give permission for themselves or their child to participate in a study, this is known as consent. When permission is given by the child this is assent. Unicef (2019) point out that every child is entitled to freedom of expression and to express their opinions and thoughts. Also, the views of the child should be respected in matters affecting them. Their opinions, feelings and views should be seriously considered.

BERA (2018) state that voluntary informed consent must be gained by participants at the beginning of a research study, whilst giving them the right to withdraw for any reason, at any time. The study should be explained to the participants in detail, included what is expected of them and why their participation is beneficial. Furthermore, how the information provided will be used and stored, both during and after the study.

It can be more difficult to gain assent from vulnerable children or children with additional needs. Ellis and Beauchamp (2012, cited in Hodgkin and Beauchamp, 2019) and Palaiologou (2012) maintain that when a research project is being explained and gaining agreement from the participants; how well the child can process information, understand what is expected of them and whether they can express their own views needs to be considered. This can be a barrier when carrying out research with children with Special Educational Needs.

When carrying out this research project, the children were asked for assent by using a visual storyboard. Kumpunen *et al.* (2012) believes that storyboards are an effective way to gain assent from children. Pictures could be used representing different parts of the study. The researcher may recite language describing the stages but leave out words for the child to replace with storyboard drawings. This would result in children creating an unhappy or happy face to show how they feel about taking part in the research.

The children were not encouraged or pressured in any way to participate in the research. According to Twycross and Smith (2017) there should be no coercion or pressure to get the children to participate. This includes bribery, inducements and

emotional manipulation. Consent throughout the project is ongoing and should be reaffirmed regularly. If a child shows any sign of upset or looks uncomfortable during the process, it should be reiterated that they have the right to withdraw at any stage. However, according to NSPCC (2022) if written consent is gained at the start of a study, this may jeopardise the continuous process of obtaining consent throughout.

The teachers were asked for consent and the parents, for both themselves and their children to participate in the project. Detailed information sheets and consent forms were sent out for the adults to read and sign. NSPCC (2022) state that information sheets and consent forms must be tailored appropriately for participants and can be combined into one document. However, sometimes people may see written consent as a barrier to participation if they struggle with literacy problems or find written consent too official. The information included in the Participant Information Sheet (PIS) will cover a broad range of issues. University of Wales Trinity Saint David (UWTSD) (2022) believe that to adhere to transparency and fairness a PIS needs to be provided. Some details to include are; any risks that may affect participants, who the data controller is, an outline of the project and what is required of them, general consent to prove they are willing to participate and consent to process personal data. Also, safeguarding interventions that will be used to limit risk, relevant contact numbers and an outline of their rights.

Respecting confidentiality and anonymity is a priority during the study. According to BERA (2018) each participant has the right to confidentiality and anonymity. Legal requirements must be followed with regards to storage and use of personal data as stated in the General Data Protection Regulation (GDPR). Each participant has the right to know; how their personal data is being used, who has access to it and how and why their personal data is being stored. Each citizen is entitled to access their stored personal data at any time. Unicef (2019) point out in article 16 that each child is entitled to privacy. The law should protect a child's family, home and private life, as well as shielding them from unlawful attacks that damage their reputation.

BERA (2018) maintain that in some cases confidentiality and anonymity agreements may be overridden if a disclosure is made. If a child reveals they are being abused there is a statutory obligation to speak to appropriate authorities and disclose the confidential information. NSPCC (2022) believe that concerns may be sparked by

what participants in the research study write or say. They may also be flagged by observations made during the research. According to the NSPCC's policy, if you become aware of such concerns, you have an obligation to act on the information and forward it to an appropriate organisation. According to Unicef (2019) when decisions and actions affecting children are made, the priority should be keeping the best interests of the child in mind.

Reducing risk to the participant

When conducting research projects there are potential risks that may affect the children involved. There is a risk of causing harm due to partaking in research studies. Harm can occur in many ways ranging from physical harm caused by the research project, physical punishment from others due to disclosing stigmatising information and emotional distress. Ethical Research Involving Children (ERIC) (2019). Actions will be reconsidered immediately if there is risk of harm being caused by the study, with the purpose of minimising harm. (BERA, 2018). If the child shows signs of emotional distress the observation may be terminated and the child withdrawn. However, according to NSPCC (2022) if a participant becomes upset throughout the research, this does not always suggest that the study should be halted. It should be reasonable to proceed as long as the participant is clear that they want to continue and the issue is handled compassionately, with appropriate support in place. Unicef (2019) believe that governments must protect children from abuse, neglect and violence which can be caused by anyone who cares for them.

Another potential risk may be safeguarding risks with regards to data protection. ERIC (2019) state that the exchange of information should be confidential to those involved when it comes to collecting data and storing it. Also, ensuring anonymity for the children in the study. This study will keep in line with the Data Protection Act (2018) who believe that data protection principles must be followed. The information collected must be managed in a secure manner, including protection against unauthorised or unlawful processing, loss, access, damage, or destruction. Data should be used transparently, lawfully and fairly. It should be accurate and not kept for longer than necessary.

Reducing risk to the researcher

During research studies there is a risk that the researcher could be accused of harm or impropriety. According to BERA (2018) and NSPCC (2022) if anyone involved in the study notices malpractice is taking place by the researcher, concerns should be raised and an established complaints procedure should be followed. This will be put into place for this project.

Another risk to the researcher may be that they become upset or distressed or may suffer physical injury. NSPCC (2022) believe that a risk assessment process should be followed, involving continuous risk assessment throughout, by ensuring that the researcher has access to suitable external and internal support for the entirety of the study.

Reducing risk to the University

The university may receive adverse publicity due to a person representing the university not acting professionally. UWTSD (2022) state that staff and students conducting research must take accountability for their actions when behaviour drops below the codes expectations. There is a code of practice that is followed outlining that; highest standards of integrity and vigour in their research should be understood and maintained. Also, the responsibility is on the university to maintain a research environment that fosters good research practice and a culture of research integrity, whilst assisting researchers to understand and act in accordance with expected standards, behaviours and values.

ERIC (2019) believe that children should be safeguarded from incompetent or abusive researchers, therefore appropriate child protection protocols should be in place. The researcher will have a Disclosure and Barring Service (DBS) check. UWTSD (2022) point out that any student or member of staff involved in research with children will have a DBS check. Evidence of this check must be shown, along with other documentation when applying to the Ethics Committee.

Another risk to the university may be a researcher losing data and breaching confidentiality. UWTSD (2022) say that a Data Protection Impact Assessment must be carried out to aid the researcher, identifying possible risks that may arise encroaching on participants privacy. This then helps to implement appropriate

controls and measures to manage and minimise risks. This is a legal requirement set out by the UK GDPR.

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