



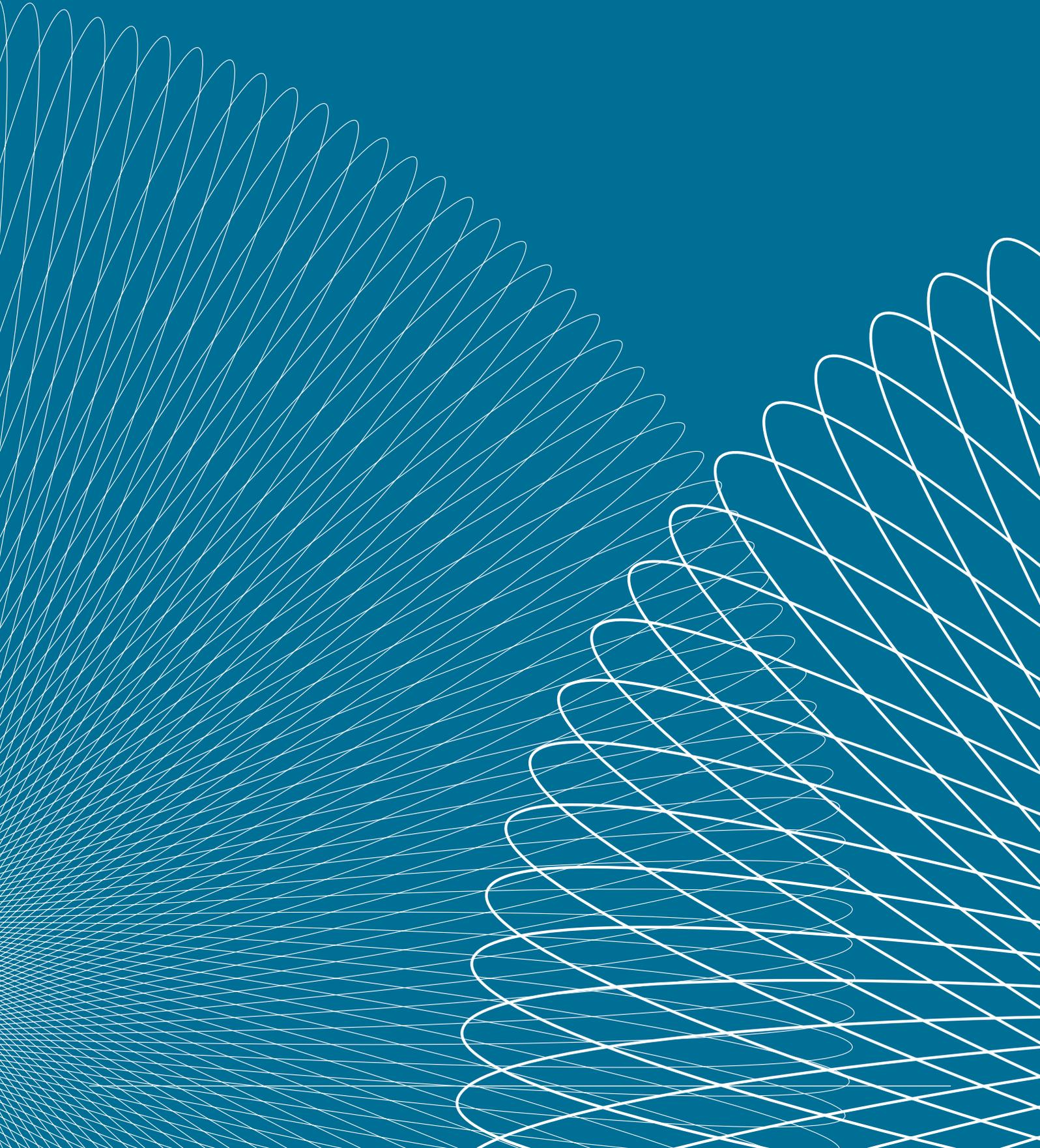
CENTRE FOR AUTISM
MIDDLETOWN

Life Skills



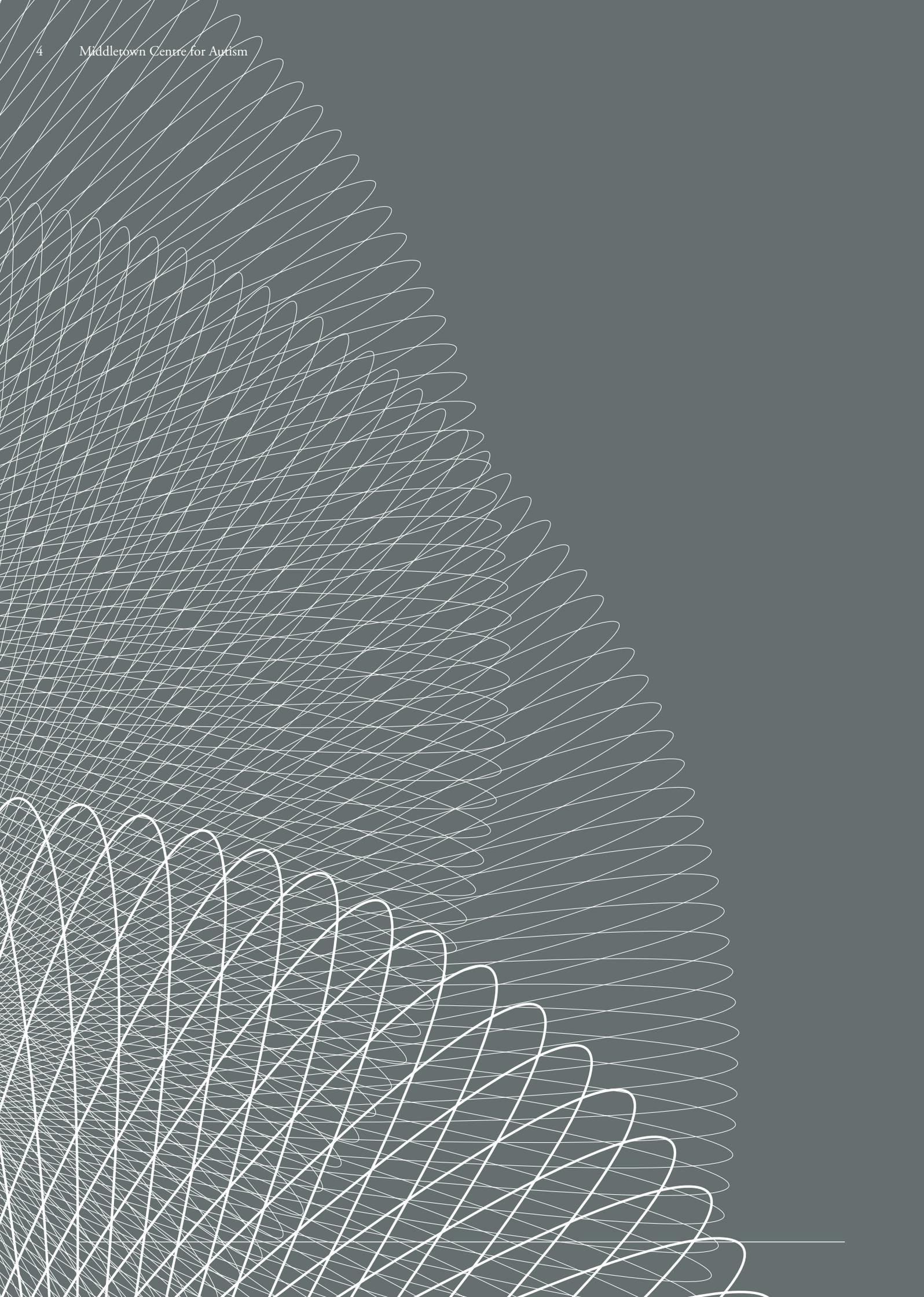
Research Bulletin Issue No. 17

Enhancing the lives of children and young people with autism and their families,
through the delivery of specialist educational services



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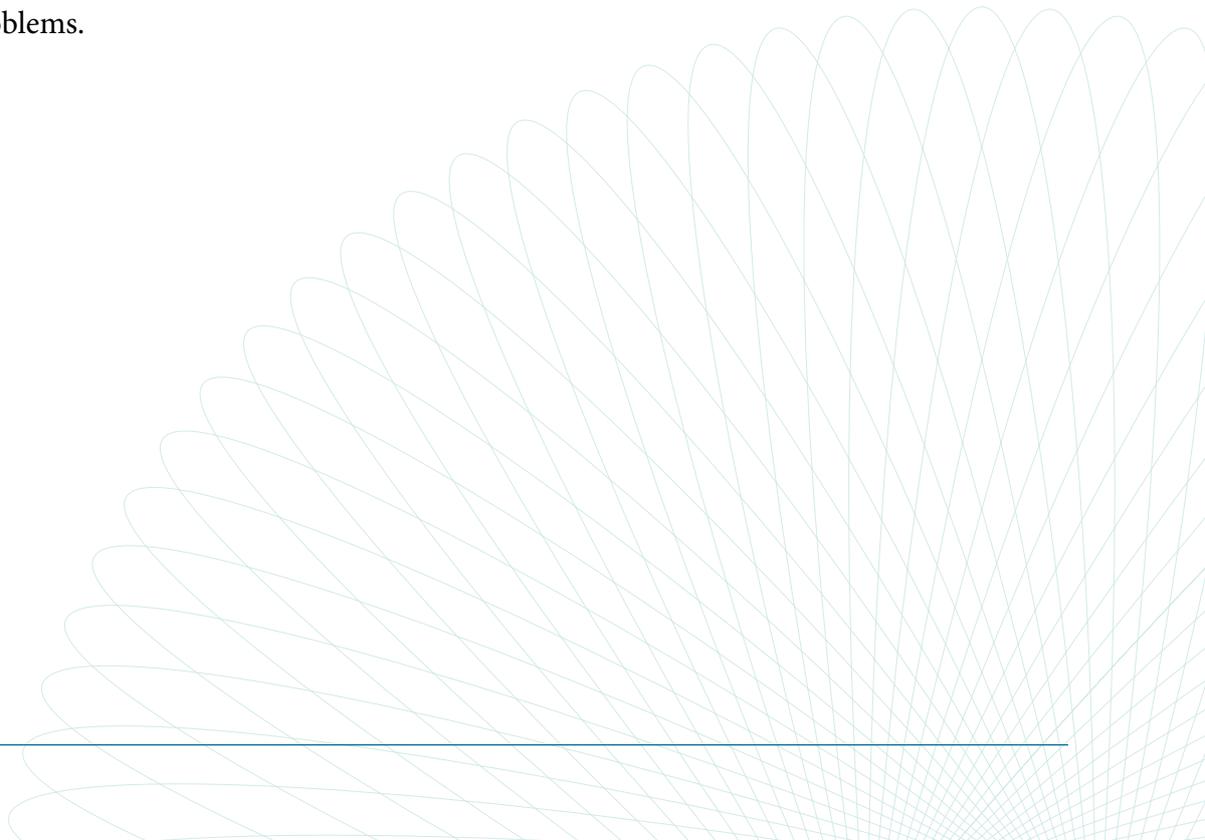
INTRODUCTION

This is the seventeenth Research Bulletin produced by Middletown Centre for Autism. The aim of the Centre's Research Bulletins is to provide accessible summaries of relevant peer-reviewed research articles and reviews of literature. The current Research Bulletin contains ten articles related to Life Skills. Articles are sourced from a range of peer-reviewed journals from the period 2009 to 2015.

The Bulletin commences with an interview with Dr Jed Baker, an award winning author of five books, including *Social Skills Training for Children and Adolescents with Asperger's Syndrome and Social Communication Problems*; *Preparing for Life: The Complete Handbook for the Transition to Adulthood for Those with Autism and Asperger's Syndrome*; *The Social Skills Picture Book*; *The Social Skills Picture Book for High School and Beyond*; and *No More Meltdowns: Positive Strategies for Managing and Preventing Out-of-Control Behavior*. He is the Director of the Social Skills Training Project, a private organisation serving individuals with autism and social communication problems.

He is on the Professional Advisory Board of Autism Today, ASPEN, ANSWER, YAI, the Kelberman Centre and several other autism organisations. In addition, he delivers lectures providing training internationally on the topics of social skills training and managing challenging behaviours.

Please note that the views represented in this document do not necessarily reflect the views of Middletown Centre for Autism. Reviewers have, where possible, used the original language of the article, which may differ from UK and Ireland usage and the usage of a range of terminologies for autism.





INTERVIEW WITH DR JED BAKER

1. What key life skills should be taught throughout childhood and into adulthood?

This is a very broad question as individuals with autism are as varied as those without autism and thus key skills depend on the needs of the individual. For those individuals with language challenges (Level 2 and 3 of ASD), teaching a system of communicating is a priority. Whether it is verbal, through picture symbols or augmentative programmes that talk for the individual, it is imperative that a way of communicating preferences, needs, and responding to others is established. Many of our early intervention programmes focus on building these early language skills.

For those who have more facility with language, key skills for success may be more variable. I ask two practical questions to help target relevant skill goals: What does the individual do too much or too little of in order to function successfully in a particular setting? ‘Too much’ behaviours are often disruptive behaviours like becoming aggressive when asked to do a task or to wait for a desired item. Inflexibility with others, interrupting, violating others’ space, or making insensitive remarks. ‘Too little’ behaviours may be things like not asserting oneself, asking for help, initiating interaction or responding to others.

If we look at predictors of successful transition into adulthood, there are some key skill areas that should be considered. First is self-awareness, the ability of individuals to understand their strengths as well as challenges so that they can pursue their talents and effectively get help for challenges. Persistence, the ability to handle mistakes and accept help is another key to successful transition. Work by Carol Dweck has demonstrated that having a growth mindset in which mistakes are welcomed along with help to learn and grow leads to better outcomes.

Goldberg and colleagues demonstrated that families that allow their children to aim high and not over protect them have better outcomes as well. They also showed that individuals who are involved in their community and in their own decision making have more successful transitions into adulthood.

2. What life skills can be introduced in the early years?

For those with less language, communication is key. The ability to tolerate mistakes and ask for assistance is a lifelong skill that can allow individuals to achieve their goals. Establishing motivation to interact with others, to experience joy with others can also be established early on through early intervention programmes.

3. What specific challenges do children and young people with autism experience when learning life skills?

Many individuals with ASD experience anxiety due to learning, sensory and social challenges. Sometimes anxiety can make it difficult to use skills that have been taught. Thus in addition to skill building, we also have to help individuals manage anxiety so that they can gradually face their fears to accomplish their goals.

In addition, difficulties with perspective taking can make spontaneous social problem solving difficult. Individuals with ASD may need to be taught what others may be thinking or feeling when they act in particular ways. Understanding others’ perspectives is key to effectively negotiating conflicts and interacting successfully with others in play, conversation, friendship, romance, and work. Thus it is important to teach perspective taking in almost every skill we teach, examining the reactions others will have when we behave in certain ways.

4. What are the most effective ways of teaching life skills to children and young people with autism?

There are many effective ways to teach skills and the choice of strategy depends on the individual's language and cognitive abilities. For those with less language, the use of visual supports, video, and prompting in the moment (incidental teaching) is key. As individuals have more language facility, one can also explain what and why to act in certain ways before modelling or roleplaying a skill. Younger children and those with less language may need incentives/rewards for skill use while those who have more abstract thinking ability may be able to forgo any external rewards as the intrinsic reward of having learned the skill may be payoff enough.

Teaching a skill is only one part of the equation. One must also ensure that the individual is motivated to continue to use the skill, and that there are reminders in place to help generalise skill use into natural settings.

5. What are the benefits of teaching life skills in 'real' settings instead of the classroom?

The research suggests that we get better generalisation to natural setting if the initial teaching is done there. However, there may be times when the natural setting is too chaotic to do the initial teaching and we may do some pre-teaching in a quieter, controlled environment before taking the lesson to the natural setting.

6. In what ways can teachers and parents work together to support life skills training?

Caregivers are both important sources of information about what skills need to be taught as well as helping to generalise skills into natural settings. In all stages it is helpful if caregivers can work

together to prioritise skill goals and create opportunities to learn and practice skills. I think the Early Start Denver Model is a good example of this in that trainers teach parents to play with their children in ways that help their children develop. It is more economical for parents to learn how to support development so that they are not dependent on coming to the clinic to learn every skill.

7. What strategies would you use to generalise life skills into the relevant environments?

For whatever skill we are teaching, we must create multiple opportunities to practice the skill. In addition I always equip caregivers with cue cards that instruct them on how to cue their student or child to use skills that were taught. The key to generalisation is to prime the skill before the individual needs it, coach skill use in the moment, and review skill use right after the situation.

8. Are life skills important for positive mental health? Why is this?

One of the keys to happiness and life satisfaction is to feel valued in the community, to have a meaningful impact on others. Life skills allow those with ASD to be more involved in the community through work, where they reside and how they recreate. Another key to good quality of life is the opportunity to have choices about what you do, where you live and how you have fun. The more skills one has, the more choices one may have in where they work, reside and play.



DESIGNING A SOCIAL NETWORK TO SUPPORT THE INDEPENDENCE OF YOUNG ADULTS WITH AUTISM

BACKGROUND

Acquisition of essential independence skills is regarded as a key factor in establishing a successful transition to adulthood for young people with autism. Young adults with autism face challenges in the area of organisation, initiation, and generalisation skills. These challenges may affect their communication and social skills thereby impeding the development of successful independent skills, thus increasing the need for adult prompting and continuous support. This research covers the design and implementation of SocialMirror, a device connected to an online social network whereby the young person can seek advice, emotional and practical support from a trusted and responsive network of friends, family and professionals, yet providing privacy and security for young adults with autism.

RESEARCH AIM

Challenges in self-care, everyday life chores, and social communication can adversely affect the attainment of independent functioning in adulthood. Many with autism, experiencing such difficulties, tend towards an over-reliance on family, involving issues of employment, living, cooking, taking medications, personal hygiene and relationships, thereby not truly achieving independence.

The research goal was to design and evaluate the effectiveness of an online social network embedded into everyday life to promote independence and facilitate collaboration around caregiving activities for adolescents and adults with autism, through SocialMirror. The premise being, individuals can cope with problems better after receiving online support from others.

RESEARCH METHODS

The authors recruited 12 young adults with autism and 16 caregivers actively involved in planning and supporting the transition to adulthood. Although initially considering a mobile system of support, the authors realised that harnessing the skills of the support network, from a variety of specialisms, would have a greater influence and be more beneficial, thus, the concept of social networking was embraced. A full-length mirror display as a concrete mode of communication, the SocialMirror, was introduced. It was intended to demonstrate the need to connect to advice on personal appearance and hygiene from within the home.

The researchers divided their study into three particular phases, to ensure a 360-degree view of some of the issues that their *SocialMirror* was to address, to gain the views of all participants.

Phase 1	Phase 2	Phase 3
Adults with autism – observed	Caregivers in semi structured interviews	Homogenous and heterogeneous focus groups
Recognition of the social needs and difficulties encountered	Identified concerns with transition to adulthood and supportive strategies	Critique SocialMirror, make adaptations and discuss the concerns around social networks

This procedure elicited the following issues:

- Initiation and motivation to perform everyday tasks.
 - Self-help skills.
 - Household chores.
 - Knowing when to complete such tasks as well as how to carry them out.
 - Social interaction.
- Preparing for the transition from school to adulthood.
- Asking for help in a timely manner and from a variety of sources, on demand support from parents is not always possible – students with autism needed to be offered or taught that there are alternatives.
- Availability to supports with expertise in a range of areas.

HOW IT WORKS

An individual with autism can see his/her calendar of daily events. He/she can take a picture of him/herself and send a question to the social network.

For example, he/she might seek advice on appropriate dress for a particular event, e.g. job interview. *SocialMirror* helps to contextualise the request to the rest of the network by attaching the picture, the question, and the day's calendar of events for all in the trusted network to see. When answers arrive from the support network, they are immediately reflected back to the individual.

RESEARCH FINDINGS

SocialMirror has the potential to promote independence for those with autism and to facilitate collaboration among their caregivers.

It is dependent on availability of the network but also the young person using the tool effectively, having the motivation and inclination to engage in social interaction and seeing the need for the views of others.

IMPLICATIONS FOR PRACTICE

- *SocialMirror* is one means of providing young adults with autism who are in transition to adulthood with a safe and responsive social network that allows them to get information and advice about their everyday life.
- Teaching of self-help skills must begin earlier in education to allow for assimilation of knowledge and skills, whereby young adults may only need this device for emergencies rather than as an intrinsic part of their day.
- A collaborative approach, which includes teachers, parents and the wider community, is required to ensure that young people with autism can make strides towards greater independence.
- Transitions to adulthood and acquisition of the full range of independent life skills begins much earlier than maybe previously considered.
- Teaching children with autism to recognise when they need help and how to ask is imperative.

Full Reference

Hong, H., Kin, J. G., Abowd, G. D. and Arriaga, R. I. (2009). Designing a Social Network to Support the Independence of Young Adults with Autism. *Proc. ACM Conference on Computer-Supported Cooperative Work (CSCW)*, March 2012, p. 978-987.

EMPLOYMENT AND POST-SECONDARY EDUCATIONAL ACTIVITIES FOR YOUNG ADULTS WITH AUTISM SPECTRUM DISORDERS DURING THE TRANSITION TO ADULTHOOD

BACKGROUND

From previous research in the area of post high school employment opportunities for young people with autism, it is evident that underemployment of those with autism, irrespective of cognitive ability or presence of co-morbid medical condition, is an international phenomenon. This current study, based on 66 young adults with autism, from a larger longitudinal study, *(n=406), where participants were between the ages of 10 and 52 years at the beginning of the study, poses the question, are we suitably preparing such young people effectively for independent living, including functional competitive employment?

RESEARCH AIMS

The authors focused their study on:

1. Describing the occupational and day activities for a group of young adults with autism.
2. Examining whether cognitive ability related to the type of employment or day activity experienced, conjecturing that those who had autism but did not have an associated learning difficulty would have greater opportunities in terms of
 - independent living,
 - additional educational opportunities and
 - competitive employment.
3. Investigating if there is a correlation the between type of employment or day activity attained and family income as well as the behavioural functioning of the young adults with autism.

RESEARCH METHODS

From the larger study, the extrapolated data was derived from 66 students, 80% male, 60.6% still lived at home, 74.2% had an associated learning difficulty and all within the income range \$10 000 to \$160 000.

This data was from a series of seven measures:

1. IQ - The Wide Range Intelligence Test (WRIT).
2. Adaptive Behaviour – Vineland Screener.
3. Parent interview regarding number of hours their son or daughter spent in:
 - post-secondary education,
 - competitive job,
 - supported employment,
 - sheltered workshop,
 - day activity or day programme,
 - individualised programmes with support, and
 - volunteer work.
4. Family income assessed.
5. Scales of Independent Behaviours – Revised (SIB-R) used to categorise the behaviours displayed:
 - internalised, withdrawn, self-injury, repetitive behaviours,
 - externalised, destruction of property, disruptive, hurtful to others,
 - asocial, socially offensive, uncooperative.
6. Functional independence was measured using the Revised Activities of Daily Living Index.
7. Family again interviewed as to current co-occurring diagnoses.

RESEARCH FINDINGS

Nine (13.6%, of whom 78% also worked part time) were engaged in post-secondary education, in culinary school, technical college and university and appeared to have a greater range of independent living skills.

None of the individuals had competitive full time employment. Of the 12 employed, the majority displayed an attainment of functional life skills, although greater than those in day-care, less than those in education.

They worked mainly in low paid, low skilled occupations, with employment ranging from shredding, folding napkins, replacing dirty crockery, stacking shelves to making beaded products.

Over half (56%) were participating in adult day centres, where their activities ranged from short term group employment opportunities, sheltered workshops or organised day centre activities and displayed significantly greater difficulty with behaviour and had fewer independent living skills.

Eight of the young people had no regular activities totalling 10 hours per week, yet displayed a higher level of independent functioning than those in adult day centres.

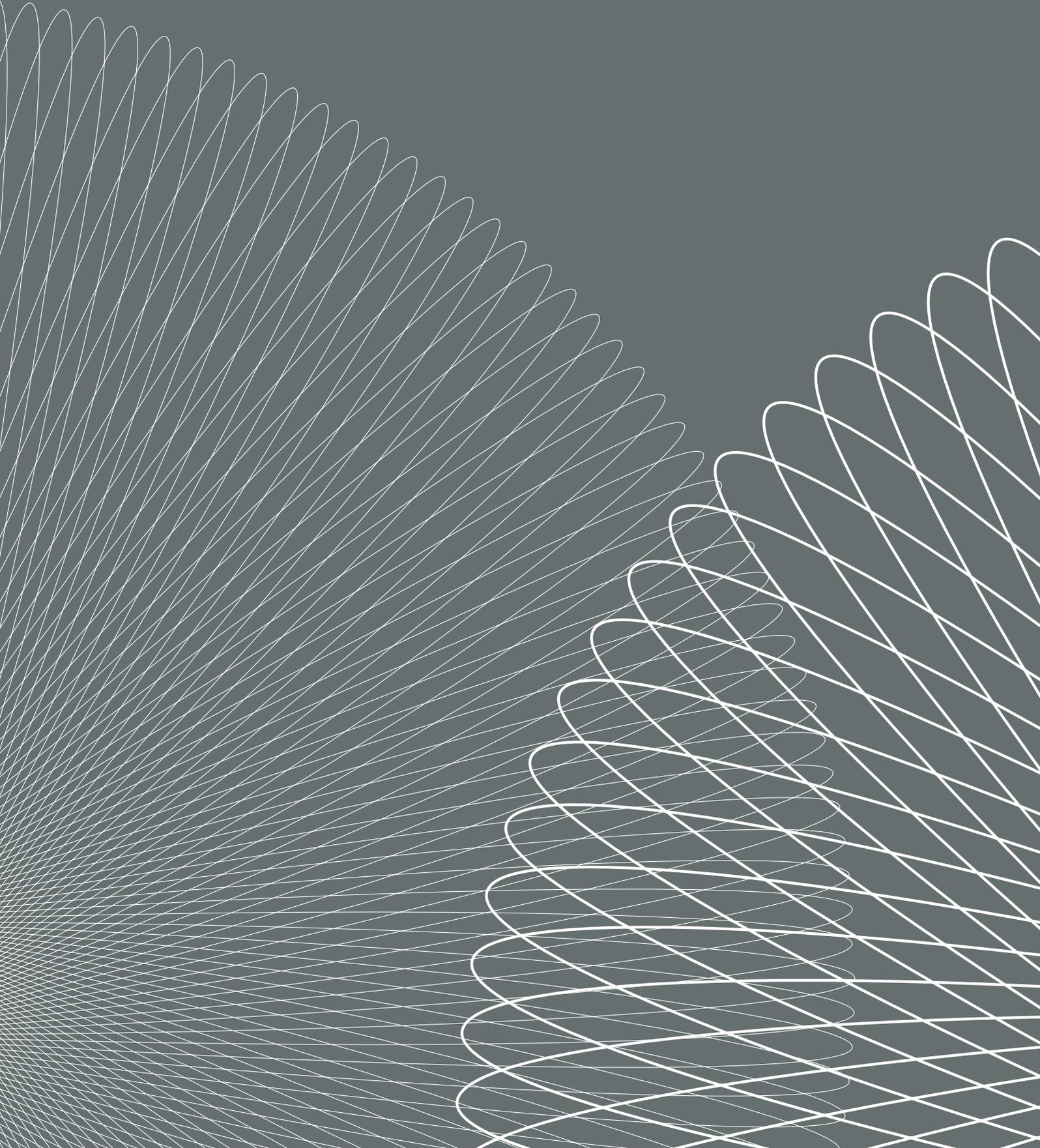
IMPLICATIONS FOR PRACTICE

- Consideration must be given, whilst within the schooling environment, to afford students opportunities to hone, perfect and attain independent living skills, including functional employability skills. This may address the low rate of employment or underemployment apparent for young people with autism when they enter adulthood with a significant number of young people having no placement or formalised day activities.
- As practitioners, we must ensure that those students who have the cognitive ability for post-secondary education or competitive employment, but may not have the necessary independent living skills, do not “fall through the gap” and have no future directions or plans when they leave school. Skills and abilities must not only be recognised, but a structured plan put in place to support maximising these skills and planning where future functional employment can be ascertained.
- As a continuity of approach, more autism focused adult services must be provided to support young people, maximising their level of independence and developing sustainable careers.
- Those individuals in day care activities may also need additional support to access education and employment, cognisant of the fact that 86% presented with a co-occurring diagnosis.
- Awareness and support must also be given to those in pursuit of a post-secondary degree, as it appears to be a viable option for those who have autism but do not have an associated learning difficulty. This cohort of students may need extra support in order to complete and translate this academic achievement into sustainable careers.
- More research, with larger samples, is needed to describe the transition process for young people with autism as they exit the secondary school system and enter the adult world.
- Individuals with autism face multiple difficulties in adult life; future research should explore mutable factors that promote a successful transition process and maximise adult outcomes.

Full Reference

Taylor, J. L. and Seltzer, M. M. (2011). Employment and Post-Secondary Educational Activities for Young Adults with Autism Spectrum Disorders during the Transition to Adulthood. *Journal of Autism and Developmental Disorders*, 41, p. 566-574.

*n= sample size



COMPUTER-BASED INTERVENTIONS TO IMPROVE SOCIAL AND EMOTIONAL SKILLS IN INDIVIDUALS WITH AUTISM SPECTRUM DISORDERS: A SYSTEMATIC REVIEW

RESEARCH AIMS

This paper systematically reviewed research papers which have evaluated the use of computer-based instruction to teach social and emotional skills to people with autism. Computer-based instruction (CBI) refers to the use of computer programmes to teach skills instead of face-to-face teaching.

The three main aims of this systematic review were:

1. To analyse the evidence for the use of CBI in teaching social and emotional skills to people with autism.
2. To provide information to people interested in using CBI with individuals with autism.
3. To encourage further research in the effectiveness of CBI in teaching social and emotional skills to people with autism.

RESEARCH METHODS

A systematic search was carried out across four databases using a list of relevant search terms. Only papers written in English and published in 1990-2010 were included. The following inclusion and exclusion criteria were applied:

1. Research which used a computer programme as the primary intervention method.
2. Research which measured the effectiveness of the computer programme on the social or emotional skills of at least one participant with autism, Asperger's Syndrome or PDD-NOS.
3. Research before 1990 was excluded.
4. Studies using virtual technology were excluded.
5. Studies involving only video models on computers were excluded (i.e. computer programmes which did not require the participant to provide any input).

In this review, social and emotional skills were defined as 'skills essential for establishing and maintaining social interaction'. This included eye contact, recognising facial expressions and understanding non-verbal cues.

Two of the authors independently searched the databases and selected the studies meeting the criteria. Eleven papers (involving a total of 330 participants) were selected for inclusion in the review.

All selected studies were summarised under a range of headings and analysed using systematic review methods. The certainty of evidence in each paper was rated as 'suggestive', 'preponderant' or 'conclusive', depending on the research methods used.

RESEARCH FINDINGS

Only one study achieved the highest level of certainty in its evidence (conclusive). In most studies, the effectiveness of CBI in improving social and emotional skills was 'mediocre'. Findings were not significant enough to support the effectiveness of CBI in teaching social and emotional skills to people with autism, but some useful points still emerged from the studies.

Outcomes were poorer when standardised tests were used in research studies, which the authors attributed to the generalisation difficulties associated with autism i.e. individuals were not able to generalise the skills learnt on the computer to novel contexts. Outcomes were better when researchers used their own measurement tools.

Only three studies examined generalisation of skills from the CBI to real life situations. CBI may be able to teach social and emotional skills but individuals with autism may not be able to transfer these skills to face-to-face interactions.

Some research papers reported more positive outcomes when the computer programmes were used more frequently, but other researchers found that participants were more likely to stop using the programmes when high frequency of use was required.

The majority of CBI programmes are designed for use with young children with autism. CBI programmes for teenagers and adults would have to include more complex topics and content relevant to their social and emotional needs. This may then increase their motivation to engage in CBI and may improve generalisation of skills to real-life contexts.

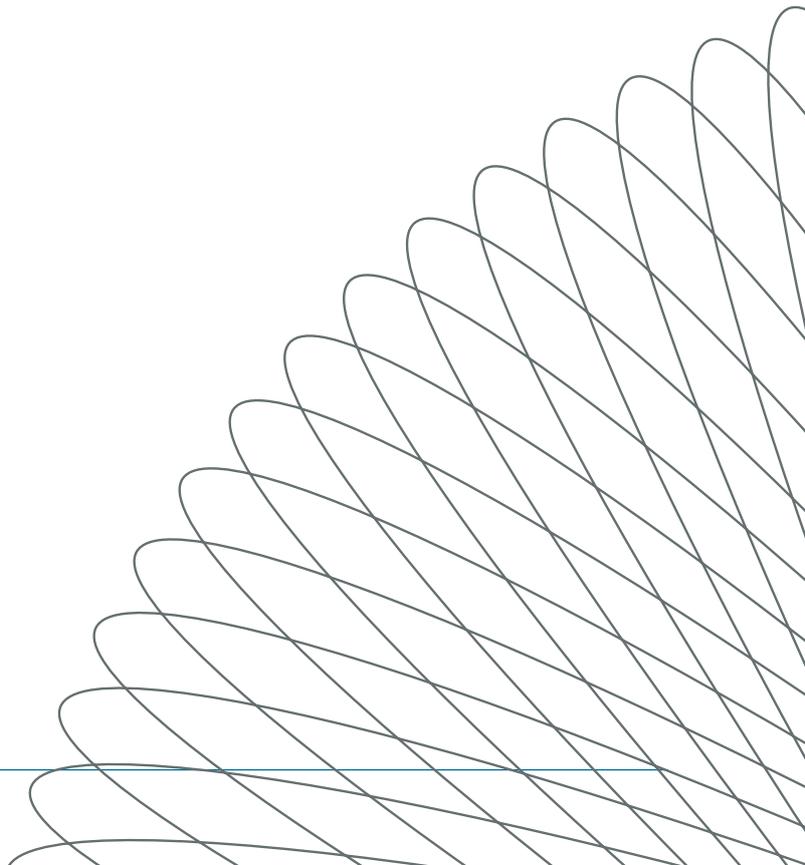
IMPLICATIONS FOR PRACTICE

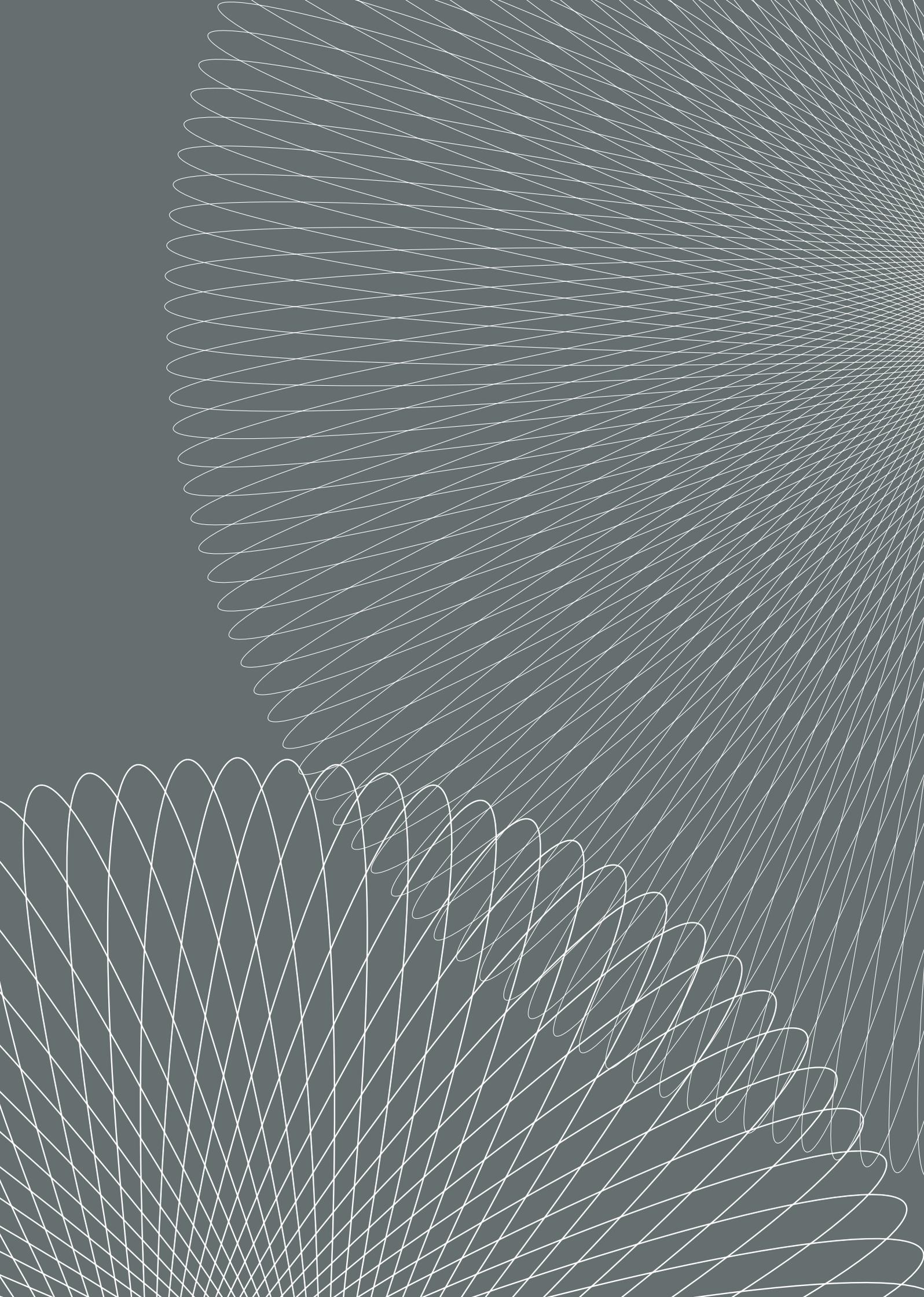
(by the authors)

- CBI is a promising intervention method to teach social and emotional skills to people with autism.
- CBI combined with one-to-one teaching and/or group activities may be more effective in generalising skills than when CBI only is used.
- CBI may be more effective when used with greater frequency but practitioners should consider the individual's motivation and daily schedule. Practitioners should calculate the lowest frequency of CBI which will gain improvement in skills in order to avoid individuals stopping the programme before complete.
- Computer programmes should be designed specifically for adolescents and adults, targeting relevant skills e.g. accepting criticism in the workplace, dating.
- The strengths and preferences of the individual with autism should be carefully considered before choosing a suitable computer programme.
- The authors also made several recommendations for future research, including the use of suitable measurements, evaluating skill generalisation, measuring the effectiveness of CBI combined with traditional teaching methods.

Full Reference

Ramdoss, S.A., Machalicek, W., Rispoli, M., Mulloy, A., Lang, R. and O'Reilly, M. (2012). Computer-based Interventions to Improve Social and Emotional Skills in Individuals with Autism Spectrum Disorders: A Systematic Review. *Developmental Neurorehabilitation*, 15, p. 119-135.





EFFECTS OF VIDEO PROMPTING TECHNIQUES ON TEACHING DAILY LIVING SKILLS TO CHILDREN WITH AUTISM SPECTRUM DISORDERS: A REVIEW

BACKGROUND

Previous research has focused primarily on video modelling techniques that require the student to watch an entire video before attempting to complete the task independently. Whereas video prompting is a form of video instruction that breaks down target skills into steps that are then performed directly after viewing each clip.

RESEARCH AIM

Many individuals with developmental disabilities such as autism display deficits in the daily living skills required for independence. Daily living skills include, among others, self-care skills, hygiene, household chores, cooking and community living skills. The focus of this review was on evaluation of the effectiveness of video prompting to teach daily living skills, and the factors that affect student attention to the video, retention of target behaviour, production of target behaviour and motivation.

RESEARCH METHOD

The researcher carried out a systematic electronic search using a combination of the following keywords; video prompting, video instruction prompting, daily living skills, functional living skills, autism and ASD. Articles were selected for review if they met specific inclusion and exclusion criteria.

1. The articles were published in a peer-reviewed journal.
2. At least one participant in the study had to be identified as having ASD.
3. The intervention had to target functional living skills (e.g. grooming, daily chores, cooking).

A total of 12 articles met the inclusion criteria. Results and data provided only include the participants in the studies who were diagnosed with ASD. There were a total of 28 individuals in the 12 studies that met the inclusion criteria.

RESEARCH FINDINGS

The goal of this review was to determine whether video prompting techniques are an effective intervention, as well as to examine the factors that may affect student attention, retention (performance) of target behaviour, production (generalisation) of target behaviour, and motivation (maintenance of target behaviour). The data analysed in this review illustrated that video prompting is a promising intervention for teaching daily living skills to individuals with autism.

Effectiveness of Video Prompting and Performance of Target Behaviour

All 12 studies in the review reported gains in target skills after instruction via video prompting to varying degrees. Video prompting resulted in improved student performance in several realms; in two studies, students displayed an increased rate of independent responses in less than 10 sessions. Video prompting techniques were shown to be more effective than static picture prompts, video prompting resulted in a greater number of independent correct responses. One study reported that this difference in percentage of correct responses was 78.2% when video prompting was used and 39.2% when static picture prompts were used.

Three of the studies compared video prompting with video modelling; results reported more positive gains for students using video prompting in terms of correct independent responding. Video modelling with video prompting resulted in faster acquisition of skills than the video modelling condition alone.

Factors Affecting Attention

A factor to consider is the model that is used in the videos. Previous research has shown that students are more likely to attend to a model that is most similar to themselves and their experience.

In this review only one study utilised both adult and peer models, there was no significant difference in performance regardless of the model used.

This review showed that participants were better able to attend to the video prompts than the full-length video required for video modelling. Breaking skills into smaller units could make the skill more attainable. The smaller video segments also allow students to attend to the most salient features of the task which is often difficult for children with autism. Due to impairments in short-term memory, shortened video prompts may ensure that the student's memory is not taxed. Whereas whole task presentation such as that done in video modelling places a demand on information processing and imitation skills that are already delayed in children with autism.

Student Reproduction (Generalisation) and Motivation (Maintenance)

Conflicting results were reported in the 12 studies with regard to the generalisation and maintenance of target skills. Three studies all noted that students were able to maintain the target skills after the removal of video prompting. Three studies reported difficulties with maintenance of target skills post intervention. Several studies reported that participants maintained high levels of performance for the target skills after video prompting was removed, but did not give information about when these maintenance sessions were conducted. Several studies did not provide information about maintenance data.

Video prompting procedures were also effective in a variety of environments including school, home and residential settings. When collecting maintenance data three studies used novel settings and materials. Participants were able to perform the target task independently in these situations.

IMPLICATIONS FOR PRACTICE

(by the authors)

- Teachers who wish to use video prompting in their classroom could see a number of benefits. In addition to providing consistency for instruction, the potential for self-directed learning could be beneficial in many environments.
- The use of video prompts would decrease the time needed to train para-professionals to teach these skills. The prompts could then be used as an error correction procedure if the skill was not maintained over time.
- One study showed that despite video prompting being more effective than static picture prompts, teachers were more likely to use static picture prompts because they were more familiar. Therefore teachers should be provided with effective professional development and support on the use of technology in their classrooms.
- With technology becoming more portable, teachers also could use video prompts to provide instruction in shops, on public transportation, in the workplace and so on.
- Overall the data presented in the studies suggested that video prompting has the potential to teach a wide array of skills to individuals with developmental disabilities, autism in particular.
- The chaining task allows the student to feel self-efficacious throughout instruction, thereby motivating the student to attempt more challenging tasks.

Full reference

Domire, S.C., and Wolfe, P. (2014). Effects of Video Prompting Techniques on Teaching Daily Living Skills to Children with Autism Spectrum Disorders: A Review. *Research and Practice for Persons with Severe Disabilities*, 39 (3), p. 211-226.

DAILY LIVING SKILLS IN INDIVIDUALS WITH AUTISM SPECTRUM DISORDER FROM TWO TO TWENTY ONE YEARS OF AGE

BACKGROUND

Many individuals with autism spectrum disorder exhibit impairments in daily living skills (DLS), which can inhibit their functional independence, in terms of their personal care skills, domestic skills and community skills. While the considerable research around the influencing variables for the attainment of daily living skills has identified IQ levels, early language skills, ASD symptoms, cognitive skills, demographics and behaviour/ emotion problems as key considerations in supporting individuals with ASD to acquire daily living skills, there appears to be a dearth of research into the long term outcomes / maintenance of daily living skills. An increased understanding of the trajectories of daily living skills and predictors of outcomes in this area would support appropriate intervention targets in promoting and optimising functional independence in individuals with ASD.

RESEARCH AIM

The aim of this particular study was to examine the predictors of DLS attainment and the overall trajectories of daily living skills sub domains such as personal care, domestic skills and community skills. It is the first study to separately examine trajectories of sub domains and to assess the role of early intervention on adult daily living skills outcomes.

RESEARCH METHODS

This was a longitudinal sample of 179 individuals who were referred to agencies for evaluation of possible autism prior to 37 months of age, and were followed from two years of age through to 21 years of age. Within the 179 individuals there were two groups, 152 individuals who received a diagnosis of ASD and 27 individuals who received a non-spectrum disability diagnosis. Families of these individuals completed in person assessments at approximately ages (time points) two, three, five, nine, 18 and 21, resulting in 966 assessments for the participants.

The in person assessments consisted of parent interviews (Autism Diagnostic Interview-Revised ADI-R), youth assessment (Autism Diagnostic Observation Schedule) and a battery of questionnaires. In order to be considered for analysis, each individual had to have had a minimum of three Vineland assessments throughout the course of the study.

The measures taken were:

- Daily living skills age equivalent using the Vineland Adaptive Behaviours Scales (VABS) at each time point.
- Autism severity was based on the sum of the Social and Non Verbal Communication Domains and the Restricted and Repetitive Behaviour Domain total from Behaviour Algorithm as per parent report estimates.
- IQ and language was obtained from The Mullen Scales of Early Learning, Wechsler Abbreviated Scales of Intelligence (WASI) and Differential Abilities Scale (DAS). Age equivalents from the Vineland Assessments were used to estimate expressive and receptive language.
- Diagnosis: Using all the information available to them, clinicians made best estimate clinical diagnoses of ASD, other non-spectrum disability or psychiatric disorder, other typical development. Diagnoses were assigned at each in-person assessment except at time point three. Overall, 152 individuals received a diagnosis of ASD and 27 individuals received a non-spectrum disability diagnosis
- Treatment: Information regarding types of treatment received prior to time point (age) three was collected via a treatment log in which parents were asked to report the type, frequency and length of any individual therapy their child had received, ranging from Mentored Parent Implemented Structure Teaching (MPST), to Applied Behaviour Analysis (ABA), to Speech and Language Therapy, Occupational Therapy etc.

- Statistical Analyses of all the above consisted of Generalised Linear Mixed Model (GLMM), the Bayesian Information Criterion (BIC), T tests, and Multivariate analysis of variance (ANOVA) to control for all variabilities within the study.
- In addition those participants receiving MPST treatment by age three were also more likely to be in the high DLS group, again supporting early intervention as a predictor.

RESEARCH FINDINGS

- All participants showed continual development of daily living skills throughout childhood and adolescence.
- Children with initially higher non-verbal problem solving skills and higher receptive language skills showed a more rapid progression of daily living skills, supporting early childhood non-verbal mental age and receptive language skills as significant predictors in daily living skills attainment.
- Participants with ASD who showed a lower initial Non Verbal Mental Age (NVMA) when compared to non-spectrum participants demonstrated slower gains of age equivalent daily living skills. Post hoc analysis revealed that the lower NVMA group had significantly lower daily living skills at all-time points.
- Participants in the ASD group were further divided into two distinct categories, those whom presented with low daily living skills and those with high daily living skills. As the participants grew older the trajectories (outcomes) quickly diverged. By the time point of 21 years, the low DLS group had attained a DLS age equivalence of approximately 5.01 years so a deficit of approximately 16 years compared to their chronological age of 21, whereas the high DLS group achieved a DLS – AE of 13.69 years, a deficit of seven years compared to their chronological age of 21. The high DLS group had significantly higher NVMA and language skills and less social-communication impairment.
- Trajectories and predictors of the DLS sub domains of personal care, domestic care and community skills were very similar to the overall DLS-AE as described above, with two categories of consistently high and consistently low across all three subdomains, with 25 individuals in a mixed category (different trajectories across the three subdomains). The primary difference with the groups were that more participants in the “high” group had received more than 20 hours of mentored parent structured teaching (MPST) by time point three than those in the “low” group.
- A slowing of DLS attainment in later adolescence particularly for domestic chores was noted in the study, which suggested that rather than a loss of any skills attained, it reflected changes in performance of the skill or the expectations of the caregivers.

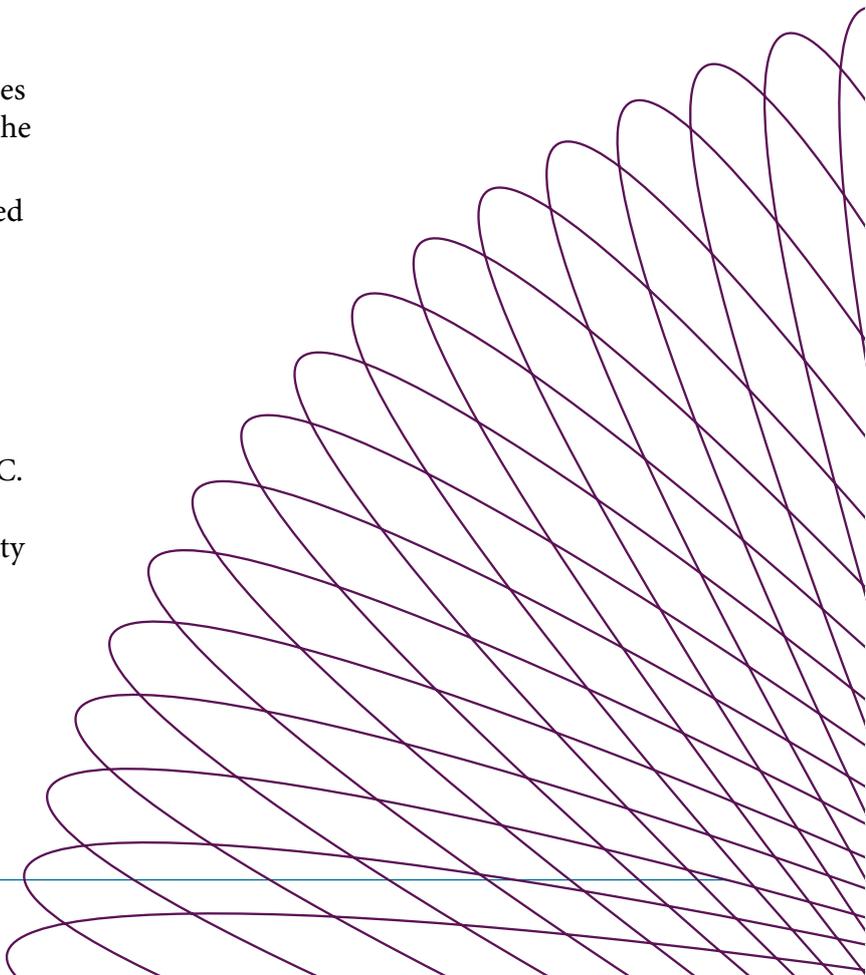
IMPLICATIONS FOR PRACTICE

- The development of early language skills is an important predictor of DLS attainment.
 - Interventions targeting daily living skills would benefit young children with early cognitive delays regardless of diagnosis.
 - There is a need for schools and transition programs to specifically target daily living skills in order to promote functional independence.
 - Continued expectations in the performance of daily living skills is paramount for the individual's attainment of the skills.
-

- This study relied on parental/caregiver reporting of daily living skills rather than a direct assessment of the DLS. Future research could focus on direct observations to allow for objectivity, in turn informing the development of targeted intervention programs as priorities will invariably differ depending on an individual's cognitive and language abilities.
- The treatment logs which were completed by parents did not specify what the treatment goals were, so while the participants who received MPST intervention prior to age three did appear to make greater gains in DLS, this study cannot definitively conclude that this intervention directly affected attainment of DLS. In addition, although ABA, speech therapy and other types of therapy were not significantly associated with DLS attainment, the lack of knowledge regarding specific treatment goals as per the treatment log cautions against interpretation of a null finding. Future research is needed to investigate the relationship between the types and targets of treatment intervention with the long term attainment of DLS.
- Only 36 of the 179 participants were assessed at T21 which limits the interpretation of observed attainment/declines in DLS so a larger sample size is required in future research.

Full Reference

Hus Bal, V., Kim, S.H., Cheong, D., and Lord, C. (2015). Daily Living Skills in Individuals with Autism Spectrum Disorder from Two to Twenty One Years of Age. *Autism*, p. 1-11.





EQUIPPING YOUTH WITH AUTISM SPECTRUM DISORDER FOR ADULTHOOD: PROMOTING RIGOR, RELEVANCE, AND RELATIONSHIPS

BACKGROUND

Navigating the transition from school to college or careers is a challenge for many young people. For individuals with autism these normative challenges associated with the transition to adulthood are compounded by the additional difficulties associated with having autism. Difficulty coping with change is part of the behavioural phenotype of ASD, and even small changes in routines and environments can be challenging for the individual. The Individuals with Disabilities Education Improvement Act (IDEA, 2004) mandates that the transition service be part of each student's Individual Education Plan (IEP) to equip these young people develop the skills, supports and relationships needed to overcome their challenges and achieve their desired post-school goals.

RESEARCH AIM

The authors reviewed important elements of effective transition education for adolescents with ASD by reviewing recent findings related to post school employment, education and living outcomes of young adults with ASD. In addition, they describe a framework for addressing three important aspects of secondary schooling to support transitions: rigor, relevance and relationships. The aim of this review is to highlight the promising approach this framework offers for addressing the multifaceted needs of young people with ASD, which will influence policy and practice by ensuring that rigor, relevance and relationships are viewed as essential, inseparable elements of a comprehensive transition education for students with ASD.

RESEARCH METHODS

The authors used several methods to complete this review of current literature:

- The National Longitudinal Transition Study-2 (NLTS-2), regarded by many as being the best source of information on current Post-Primary curriculum and transition practices for those with autism. It reviewed outcomes for 922 students with autism between the ages of 13 and 26 years, 84% of whom attended mainstream education, 12 % attended a school dedicated to those with difficulties and 4% were being educated elsewhere. This found that young adults with ASD had a higher rate of unemployment than graduates with speech/language impairments, learning disabilities, and intellectual disability. More than half were completely disengaged from employment and/or educational opportunities during the first two years after high school.
 - The work of Taylor and Seltzer (2011), Chiang et al (2012), and Shattuck et al (2012) was reviewed, as their studies consisted of two to six year follow up evaluations of transitions from high school.
 - The Taxonomy for Transition Programming was reviewed for identifying five key components on transition education:
 - a) Student focused planning.
 - b) Student development.
 - c) Interagency collaboration.
 - d) Family involvement.
 - e) Program structure.
 - The Guideposts for Success (National Collaborative on Workforce and Disability for Youth, 2009) was also reviewed for identifying five key components to promoting successful youth transitions, those being:
 - a) School based preparatory experiences.
 - b) Career preparation and work based learning experiences.
 - c) Youth development and leadership.
 - d) Connecting activities.
 - e) Family involvement and supports.
 - Carter and Draper's 2010 framework for promoting rigor, relevance and relationships.
-

RESEARCH FINDINGS

Access to Rigorous Learning Opportunities

Transition education involves ensuring that adolescents with ASD receive strong, quality instruction and individualised support to access learning opportunities that are challenging, help students reach their potential and reflect high expectations (from both teachers and parents). The authors note the increase in assigned individual paraprofessionals may have some unintended consequences when relying too heavily on adult delivered support within inclusive settings (decreased peer interactions, access to certified teachers, academic engagement etc.).

Instruction that has Relevance to Life after School

In order for instruction to be effective and relevant it must build on the individual's strengths and interests. Whilst relevance is individualised, three areas where transition services and supports may be valuable are:

Career Development: school based activities such as promoting career awareness, accessing vocational courses, connecting to early work experiences and involvement in work study have been identified as predictors of successful employment outcomes in studies including students with autism. Self-management, video modelling and visual supports are three teaching strategies proven to be effective in teaching work related skills to students with autism.

Self Determination Skills, which involve the many component skills related to self-advocacy, choice making, goal setting and problem solving. Teaching students to become active members of the IEP process supports this.

Recreation and Leisure outside of school is an area where students with ASD are rarely involved, possibly because of families being unaware of a student's options. Schools providing an "Opportunity Mapping" process which identifies school based recreation and leisure activities available to adolescents with autism in their schools supports this.

Strengthening Supportive Relationships

Fostering supportive relationships with family members, peers, formal service providers and natural community supports is essential to strengthening relationships. Home-school transparency, improving the confidence and competence of peers, interagency collaborations, and cultivating partnerships beyond the boundaries of the school holds considerable promise for improving the quality and impact of transition opportunities for young people with ASD.

Assessment and Planning are the Foundations for Effective Transitions

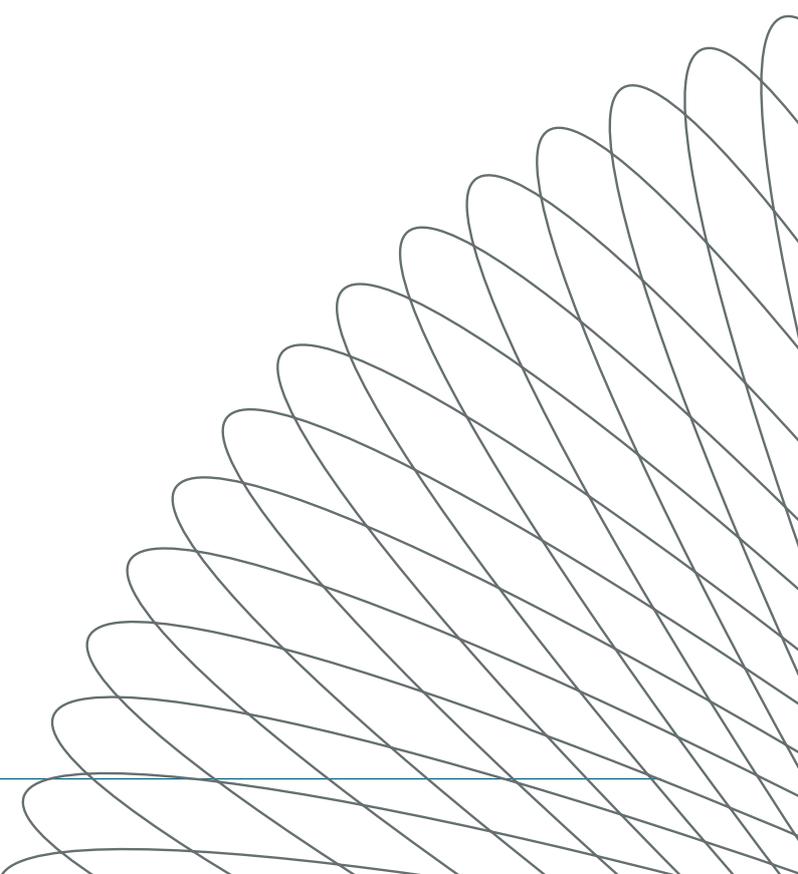
Transition assessment is the critical first step in the individualised transition planning process, and should begin in middle school and be an ongoing process. When done correctly, this encompasses all areas of transition and provides in depth knowledge of a student's needs, strengths, preferences and interests that enables teachers to plan appropriately, and can lead to specific skill development allowing students to meet post school goals in the areas of employment, education and independent living.

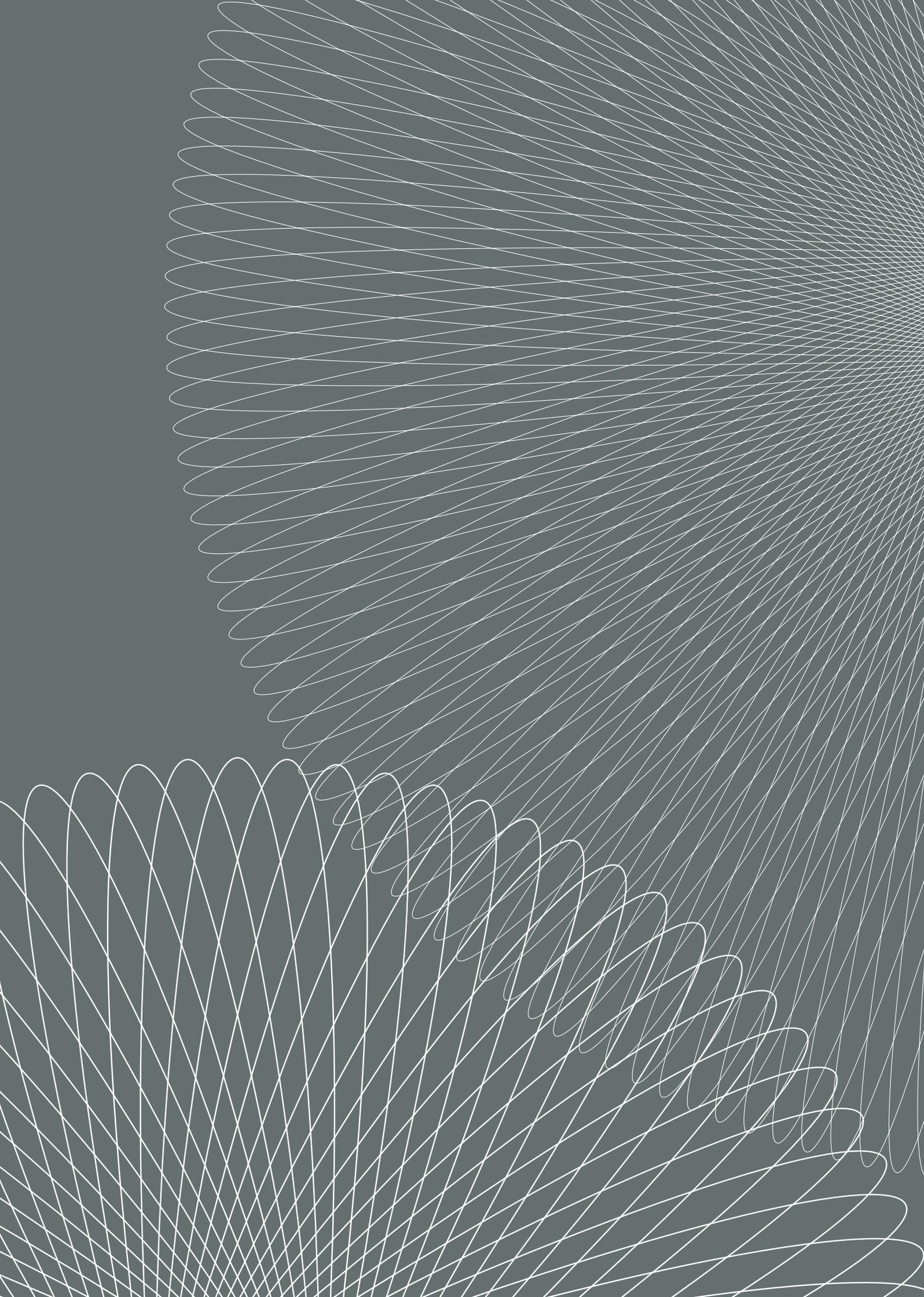
IMPLICATIONS FOR PRACTICE

- Although critical features of high quality transition assessments have been articulated in studies, there is little guidance on how to use this information to effectively design, implement and evaluate the impact of transition services for individuals with ASD. A strong set of tools and related planning strategies enabling practitioners to design an effective transition service should be the focus of future research.
- So much more needs to be learned about the most effective avenues for equipping transition personnel with the related skills to implement and evaluate transition related instruction.
- Generalisation of skills across environments and repertoires is essential so interventions that address transitions need to determine how best to combine and deliver the supports required to achieve postsecondary goals in education, employment and daily living.
- Further studies to determine the most appropriate and beneficial strategies for the complex needs and diverse profiles of adolescents with ASD is warranted.

Full Reference

Test, D.W., Smith, L.E., and Carter, E.W. (2014). Equipping Youth with Autism Spectrum Disorder for Adulthood: Promoting Rigor, Relevance, and Relationships. *Remedial and Special Education*, 35 (2), p. 80-90.





SUPPORTING INDEPENDENCE IN ADOLESCENTS ON THE AUTISM SPECTRUM

BACKGROUND

Independence has been defined in the behavioural literature as task engagement in an activity in the absence of adult prompting, and in the developmental literature as enacting self-governed, self-regulated behaviours that are based on one's personal decisions. Functional independence and behavioural autonomy are key contributors to optimal post-secondary outcomes for all students, and the development of these is a critical, challenging process. For individuals with autistic spectrum disorder (ASD) this process is exacerbated by the many complexities and expectations of secondary school settings, such as multiple teachers, changing schedules, a reduction in adult monitoring and supervision, independent decision making. This shift towards independence can often result in poor post-secondary outcomes for students with ASD where independent behaviours/skills-sets appear to plateau or possibly decline.

RESEARCH AIMS

This article aims to highlight a greater need for programming in the acquisition and maintenance of independent behaviours in individuals with ASD, by exploring the factors that contribute to difficulties in independence, reviewing school wide positive behaviour support practices, reviewing focused evidence-based practices (EBPs), and subsequently offering some recommendations for practitioners and caregivers in implementing interventions that successfully target and support student independence.

RESEARCH METHODS

The authors used several methods to complete this review of current literature:

- The Common Core State Standards Initiative 2010 was reviewed for its educational standards in promoting the role of independence in secondary and post-secondary settings.
- The National Longitudinal Transition Study- 2 (NLTS-2), reviewed outcomes for 922 students with autism between the ages of 13 and 26 years, 84% of whom attended mainstream education, 12% attended a school dedicated to those with difficulties and 4% were being educated elsewhere. This found that 96% of adolescents with ASD in this study scored more than two standard deviations below the mean on the Scales of Independent Behaviour. It also indicated that 80% of those surveyed still live at home and have no jobs or post-secondary training.
- The work of Howlin et al 2004 and Eaves & Ho (2008) was reviewed consisting collectively of over 112 adults with ASD, which demonstrated over 50% of participants had outcomes described as poor or very poor.
- Twenty four studies from 1999 to present were reviewed to examine the contributing factors for the acquisition of independent behaviours.
- School wide positive behaviour support (SWPBS) interventions, and focused evidence based practices (EBPs) specific to individuals with ASD derived from the National Professional Development Centre on ASD (NPDC 2013) were reviewed, from 1997 to 2011, consisting of 73 single case designs.

RESEARCH FINDINGS

Contributing factors to acquisition of independence skills and which impact long term independent functioning were identified as:

- The core characteristics of ASD (social and communication deficits, engagement in restricted repetitive behaviours).
- Comorbid conditions such as intellectual disabilities; psychiatric diagnoses have shown to be significant in the rate of acquisition of skills.
- Executive functioning, which encompasses processing complex information.
- The presence of interfering (challenging) behaviours which can result in withdrawal, uncooperative behaviours, aggression to name a few.
- Difficulty in the generalisation of skills across settings, people or tasks.
- Prompt dependency and the lack of systematic fading out of prompts (rather than relying on environmental cues) can impede a student's participation and actually increase overall passivity.

Tenets of *Schoolwide Positive Behaviour Support Systems* have been shown to be an established school-wide intervention that can meet the behavioural support needs of those most at risk, as long as it is consistent and continuously evaluated. The tenets identified were as:

- Team based decision making.
- Data driven instruction.
- The use of evidence based practices.
- The monitoring and evaluating of progress.

Through the National Professional Development Centre review on literature, 12 *Evidence Based Practices* were identified in successfully supporting independent functioning, and reducing interfering (challenging) behaviours, and they include:

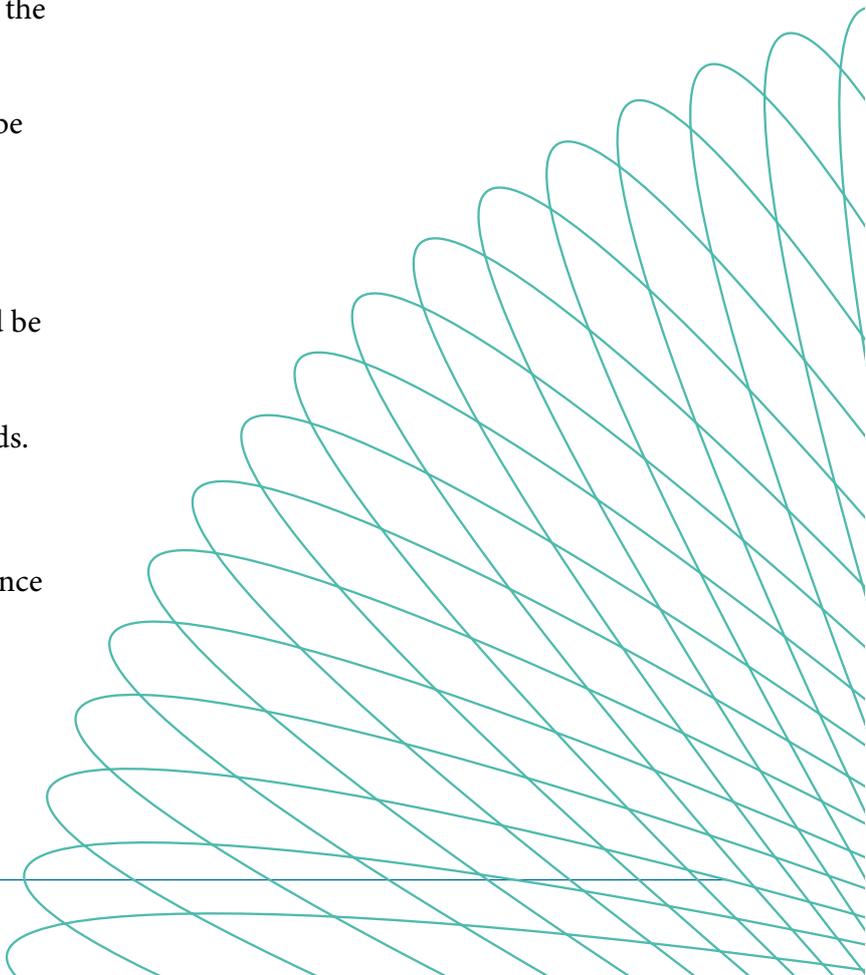
- Antecedent Based Interventions (ABI), which are a collection of strategies in which environmental modifications are considered.
- Differential reinforcement procedures.
- Extinction.
- Functional Behaviour Assessments (FBA), which identify the underlying reason a behaviour is occurring.
- Prompting.
- Reinforcement.
- Response Interruption and Redirection (RIR)
- Self-management strategies teach the learner to discriminate between appropriate and inappropriate behaviours.
- Social narratives describing social situations by highlighting relevant cues and offering examples of appropriate responding.
- Task analysis which breaks skills into smaller more manageable steps in order to teach a skill.
- Visual support strategies support an individual in navigating their day with as much independence as possible.
- Work systems are visually organised spaces where learners independently practice skills that have been previously mastered.

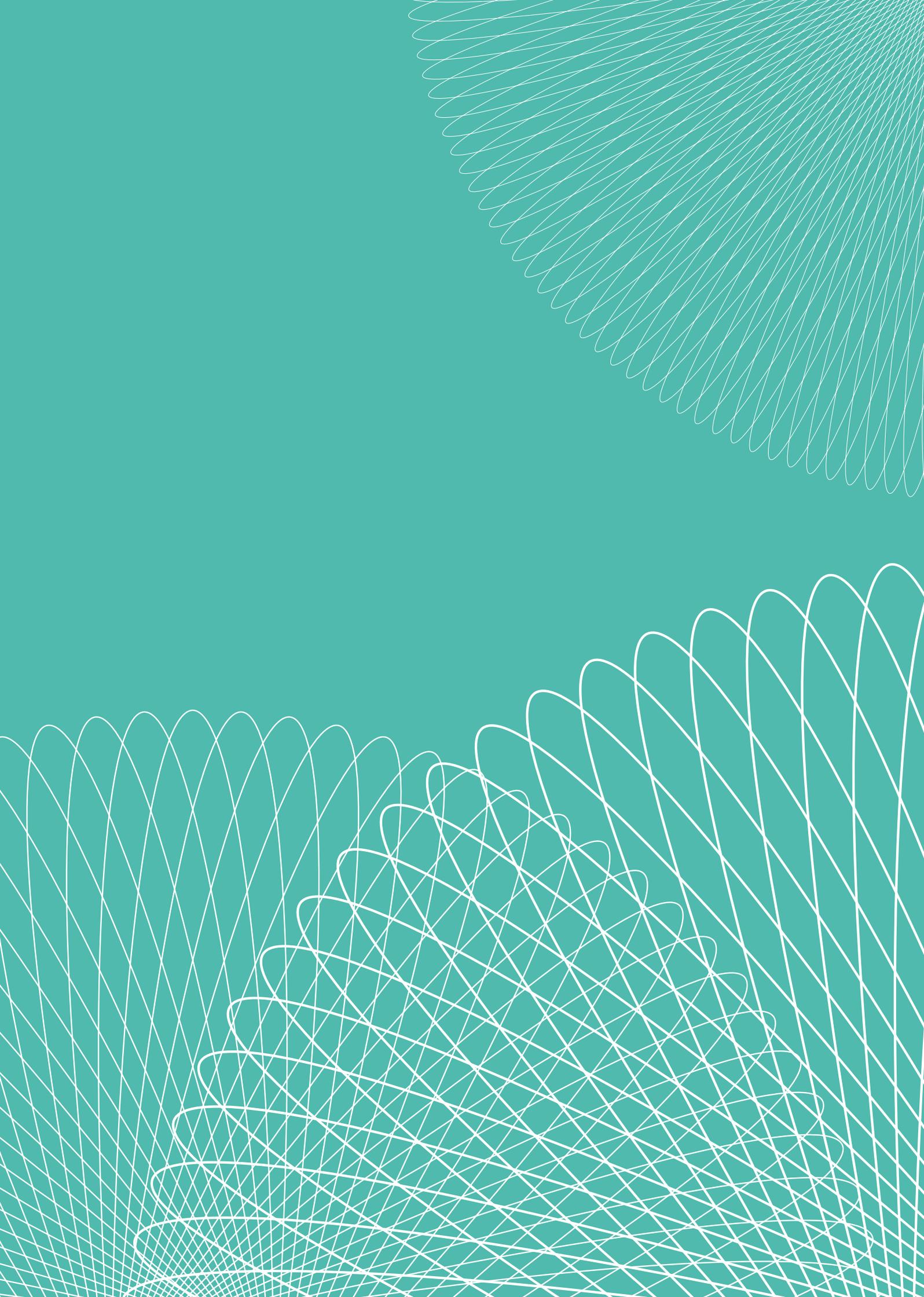
IMPLICATIONS FOR PRACTICE

- Recognising the importance of independence as a curricular area for students in secondary settings is paramount, evaluating whether or not one's current service delivery encourages independence, and ultimately teaching for independence needs to become the focus of every activity.
- Using an individual's strengths, especially for visual learners, will support independence.
- Secondary settings could use specific class periods to directly teach skills related to independence. Consideration around school structures and student goals are likely to support positive outcomes in working towards independence.
- Close collaboration between home and school is required in order for the promotion of independence to be effective.
- Future research should focus on expanding the contexts for interventions to include community and employment settings, and home settings where parent education can be delivered.
- Devising a formal assessment to accurately describe and provide guidance for programming around the independent functioning of adolescents with ASD would be welcomed rather than being reliant on the standardised assessments that are currently used and do not reflect the individual's needs.

Full Reference

Hume, K., Boyd, B.A., Hamm, J.V., and Kucharczyk, S. (2014). Supporting Independence in Adolescents on the Autism Spectrum. *Remedial and Special Education*, 35 (2), p. 102-113.





EVALUATING THE EFFECTIVENESS OF TEACHER IMPLEMENTED VIDEO PROMPTING ON AN IPOD TOUCH TO TEACH FOOD PREPARATION SKILLS TO HIGH SCHOOL STUDENTS WITH AUTISM SPECTRUM DISORDERS

BACKGROUND

In recent years, a number of researchers have demonstrated how video modelling or video prompting is an effective teaching strategy for individuals with autistic spectrum disorder in areas such as self-help, social language, play skills, academic skills and generalised imitation skills. It can be adapted in such a way as to allow instruction to match the individual's learning style and pace, making it very effective when teaching complex daily living skills to individuals with autism and/or moderate and severe disabilities. Video prompting, much like a task analysis, involves breaking a skill down into individual steps, and developing separate video segments for each step, where the learner only watches one or two steps at a time rather than the entire video, and performs the steps they viewed. Advances in technology, have meant the use of video prompting can be extended to portable handheld devices such as iPods, iPads and other electronic devices, which have become increasingly easy to operate, require little or no adaptation, and are relatively inexpensive.

RESEARCH AIM

The aim of this research was to evaluate the efficacy of video prompting via an iPod Touch in teaching food preparation skills.

RESEARCH METHOD

Two male high school students, both aged 17 years of age, both presenting with characteristics of autism and both with a diagnosis of moderate intellectual disability participated in this study. Student one was verbal, but relied on pictures and text to make choices and answer questions, and was often prompt dependent, where he would frequently stop after completing the first step of a task and wait for additional prompts before he would continue.

Student two was non-verbal, communicated primarily through gestures, was easily distracted and when he would encounter difficulty with tasks, would stop after just one or two attempts. The students' teacher was a special education teacher with a related master's degree, who admitted having limited experience with iPods, and had never drawn upon video modelling as part of her classroom instruction.

All baseline sessions and instructional sessions were conducted during the "Kitchen Basics" class where the teacher and a paraprofessional worked with a total of eight students, including the two participants, on instructional goals related to cooking and food preparation. Three food preparation tasks were selected for this study based on the following criteria:

- a) Food items were highly reinforcing to the individuals.
- b) The foods could be prepared and consumed within a reasonable time frame.
- c) Task analyses of the cooking tasks indicated similar levels of difficulties, and similar steps in the sequence.

The teacher modelled the performance of all three tasks, and once the video sequence for the task was recorded, it was edited, and transferred to an iPod Touch.

Pre-training

Prior to implementing the intervention, the participants were taught how to independently operate the iPod Touch in order to access videos.

Baseline

This consisted of firstly setting up the materials so that they were at hand and then simply requesting the individuals to "make a smoothie" for example and recording whether or not there were steps in the task analyses that the student completed (in the absence of teacher instruction for these steps).

Training / Video Prompting

The iPod was placed on a kitchen counter with the application open and the correct task sequence was displayed. Students started the first video prompt by touching the picture or text associated with the step. The video opened and played on the full iPod screen. After watching the video prompt, the student was expected to attempt to complete the demonstrated step. If the student did not begin to complete the step within five seconds, the teacher prompted the student to watch the prompt a second time before providing a model prompt followed by partial physical assistance. The teacher waited five seconds at each prompt level. If the student began to perform a step incorrectly, the teacher went to the controlling prompt of partial physical assistance.

Maintenance

A maintenance session was conducted after the students met criteria on each task.

RESEARCH FINDINGS

Student One

During baseline, Student one completed 10%-20% of the steps associated with each task independently. During training sessions, he showed a steady trend on acquisition of the tasks, reaching criterion for task one in 13 sessions, task two in seven sessions and task three in seven sessions. Maintenance probes showed completion of all three tasks with 100%.

Student Two

During baseline, Student two completed 40% of the steps associated with each task independently. During training sessions, he reached criterion for task one in just six sessions, task two in three sessions and task three in two sessions. Maintenance probes showed completion of all three tasks with 100%.

IMPLICATIONS FOR PRACTICE

- This study demonstrates how the use of video prompting via an iPod Touch can result in independent completion of complex tasks that previously had not been mastered.
- The use of video prompting via the iPod Touch may be useful across a variety of locations and tasks within the school due to the portability of the device. The iPod enables the students to re-watch the tasks when or if additional prompts were needed, hence ensuring consistency.
- Once students independently use the iPod Touch and perform the tasks, it enables the teacher to fade her presence and only have to monitor intermittently for safety reasons.
- This study only had two participants so further research across bigger more diverse samples is required.
- It could be argued that the tasks were not really performed independently due to the presence of the video prompts, which would prompt future research to perhaps examine maintenance probes in the absence of video prompts.

Full Reference

Johnson, J.W., Blood, E., Freeman, A., and Simmons, K. (2013). Evaluating the Effectiveness of Teacher Implemented Video Prompting on an iPod Touch to Teach Food Preparation Skills to High School Students with Autism Spectrum Disorders. *Focus on Autism and Other Developmental Disabilities*, 28 (3), p. 147-158.

THE EFFECT OF AUTISM SPECTRUM DISORDERS ON ADAPTIVE INDEPENDENT LIVING SKILLS WITH SEVERE INTELLECTUAL DISABILITY

BACKGROUND

Autism spectrum disorders (ASD) are a class of conditions categorised by communication problems, ritualistic behaviours, and deficits in social behaviours. While evidence supporting a genetic component is strong, no specific genetic marker has been identified. Thus, professionals have had to utilise intelligence tests and measures of adaptive functioning to aid in the diagnosis of those with ASD. The value of adaptive behaviour and its measurement has been deemed important in the assessment of developmental disabilities for many decades. The most widely accepted measure is the Vineland Adaptive Behaviour Scale but this is not effective for those with severe intellectual disabilities. For an autism diagnosis, adaptive measures are oftentimes used to determine the specific strengths and weaknesses of the individual, mainly for intervention purposes.

RESEARCH AIM

The aim of the study was to discern whether there are specific areas of daily living skill functioning that differ between autism and Pervasive Developmental Disorder – Not Otherwise Specified (PDD-NOS) in a population of adults with an intellectual disability (ID).

RESEARCH METHODS

Two hundred and thirty-four individuals with ASD and ID were selected for the study (mean age=51.62). The majority were male (54.8%) and Caucasian (72.2%). Participants were divided into an autism (n=65) and a PDD-NOS group (n=104) with an additional 65 participants with ID but not ASD making up the control group. Raters independently examined the participants on the socialisation domain, communication domain and the restrictive/repetitive domain from the DSM-IV and ICD-10 checklists.

The Adaptive Behaviour Task Analysis Checklist (ABTAC) is an informant-based measure of daily living and self-help skills which was administered to the target individual's primary caregiver and included a task analysis of six domain areas including dressing, grooming, hygiene, bathing, housekeeping and meal preparation. A multivariate analysis of variance (MANOVA) was used with the following independent variables (autism and ID vs PDD-NOS and ID vs ID alone). The dependent variables included the six domain scores on the ABTAC. Games-Howell post hoc tests were also conducted to reveal significant between group differences.

RESEARCH FINDINGS

For the dressing, grooming and hygiene domains, there was a significant main effect for the diagnostic group. The Games-Howell post hoc test for dressing showed more impairment for the autism and PDD-NOS groups compared to the ID alone group with no differences between the autism and PDD-NOS groups. The Games-Howell post hoc test for grooming showed more impairment in the autism group compared to the PDD-NOS group and the ID only group; the PDD-NOS group also exhibited greater impairment than the ID only group. The Games-Howell post hoc test for hygiene showed more impairment for the autism and PDD-NOS groups compared to the ID alone group. MANOVA results for the domains of bathing, housekeeping and meal preparation showed no significant differences between groups.

IMPLICATIONS FOR PRACTICE

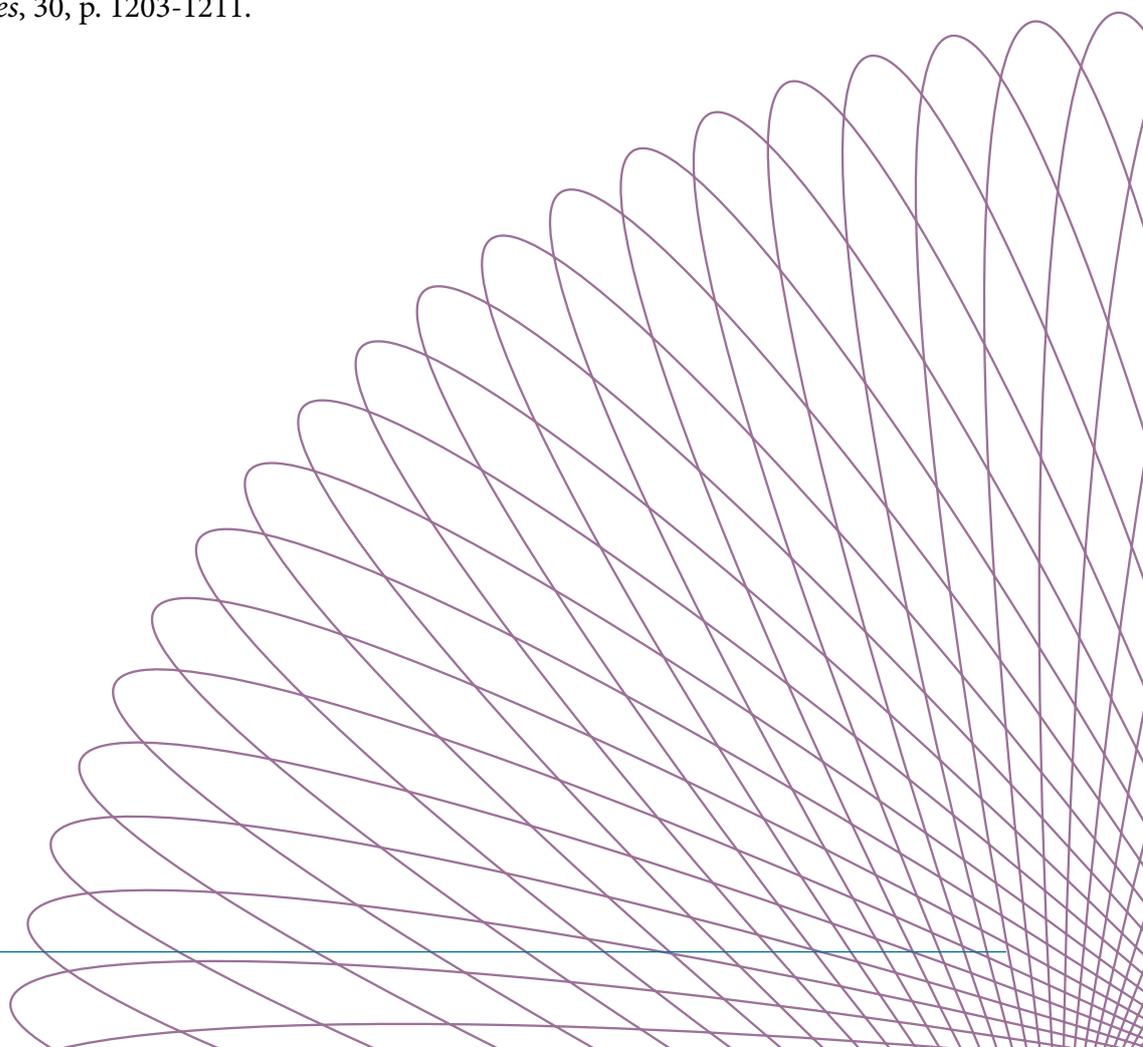
Impairments in adaptive functioning such as communication and social skills are prevalent across the population of ASD and ID. The results of this study suggest behavioural differences between those with autism, PDD-NOS and ID only, which is consistent with the findings of previous research.

This study showed that those in the autism group showed the highest impairment in adaptive functioning, those in the PDD-NOS group showed less impairment and those in the ID alone group showed the least impairment in adaptive functioning. It appears then that as ASD symptoms increase, adaptive behaviour capacity decreases.

There are salient differences in adaptive behaviour between those with autism, PDD-NOS and ID alone. The behaviours were primarily related to dressing, grooming and personal hygiene.

Full Reference

Matson, J.L., Dempsey, T., and Fodstad, J.C. (2009). The Effect of Autism Spectrum Disorders on Adaptive Independent Living Skills in Adults with Severe Intellectual Disability. *Research in Developmental Disabilities*, 30, p. 1203-1211.



ADDITIONAL KEY FACTORS MEDIATING THE USE OF A MOBILE TECHNOLOGY TOOL DESIGNED TO DEVELOP SOCIAL SKILLS IN CHILDREN WITH AUTISM SPECTRUM DISORDERS: EVALUATION OF THE 2ND HANDS PROTOTYPE

BACKGROUND

The author reflects on an increasing use of mobile Information and Communication Technology (ICT) in the support of children with autism. Mobile ICT supports in the form of specific applications can provide social and emotional supports for children and young people. This is usually in the form of support and intervention sequences with text / video / audio instructions, sequences, prompts or supportive commentary. These have been shown to be largely supportive and useful for issues such as novel tasks and social skills.

RESEARCH AIM

The author aimed to assess the efficacy of the Helping Autism diagnosed Navigate and Develop Socially (HANDS) project application. The HANDS software consists of a web-based flexible software toolkit that teachers can use to develop specific support and intervention sequences. These sequences consist of a series of linked screens that teachers can customise with video, text, images and audio. Children are then encouraged to complete a life and / or social skills task with the help of HANDS. The author sought to determine what factors mediated engagement with the software.

RESEARCH METHODS

Fifteen teachers in four special schools across Europe used the HANDS application with 26 children aged between 11-16 years. The schools were in Denmark, Hungary, Sweden and the UK. The author collected data on the use of HANDS from 15 teachers, ten children and six parents across the four schools.

This was a qualitative study so the data collected was in the form of semi structured interviews with children *(n=10) parents (n=6) and teachers (n=9); questionnaires to those teachers not available for interview (n=6) and classroom observations, which were conducted on two occasions in the UK and once in each of the other countries. This data was then analysed for key themes involving engagement and efficacy using qualitative software.

RESEARCH FINDINGS

The author highlights the following issues relating to the use of HANDS software.

- The HANDS ICT mobile support technology worked best with those children and young people who understood that they needed support in a particular area e.g. anger management and were motivated to change their behaviour.
 - Both parents and schools indicated that more parental involvement in the setting of life skills goals and social skills goals would be useful.
 - Some young people indicated that they preferred to receive behavioural prompts and reminders from the HANDS rather than from a parent or teacher. The author speculates that this is because the young people could implement behaviours in their own time and this promoted autonomy and responsibility. In the interviews one of the young people indicated that he felt teachers and parents were nagging but didn't mind a reminder from his phone!
 - Practical issues such as charging the phone and care of the phone and the accessibility of other software need to be taken into consideration.
 - A collaborative approach is best to discuss with the child / young person what they are motivated to or wish to change and then developing goals accordingly.
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IMPLICATIONS FOR PRACTICE

This was a review of one mobile ICT support, however there are now a range of desktop, mobile / table applications that can support children and young people with autism with life and social skills.

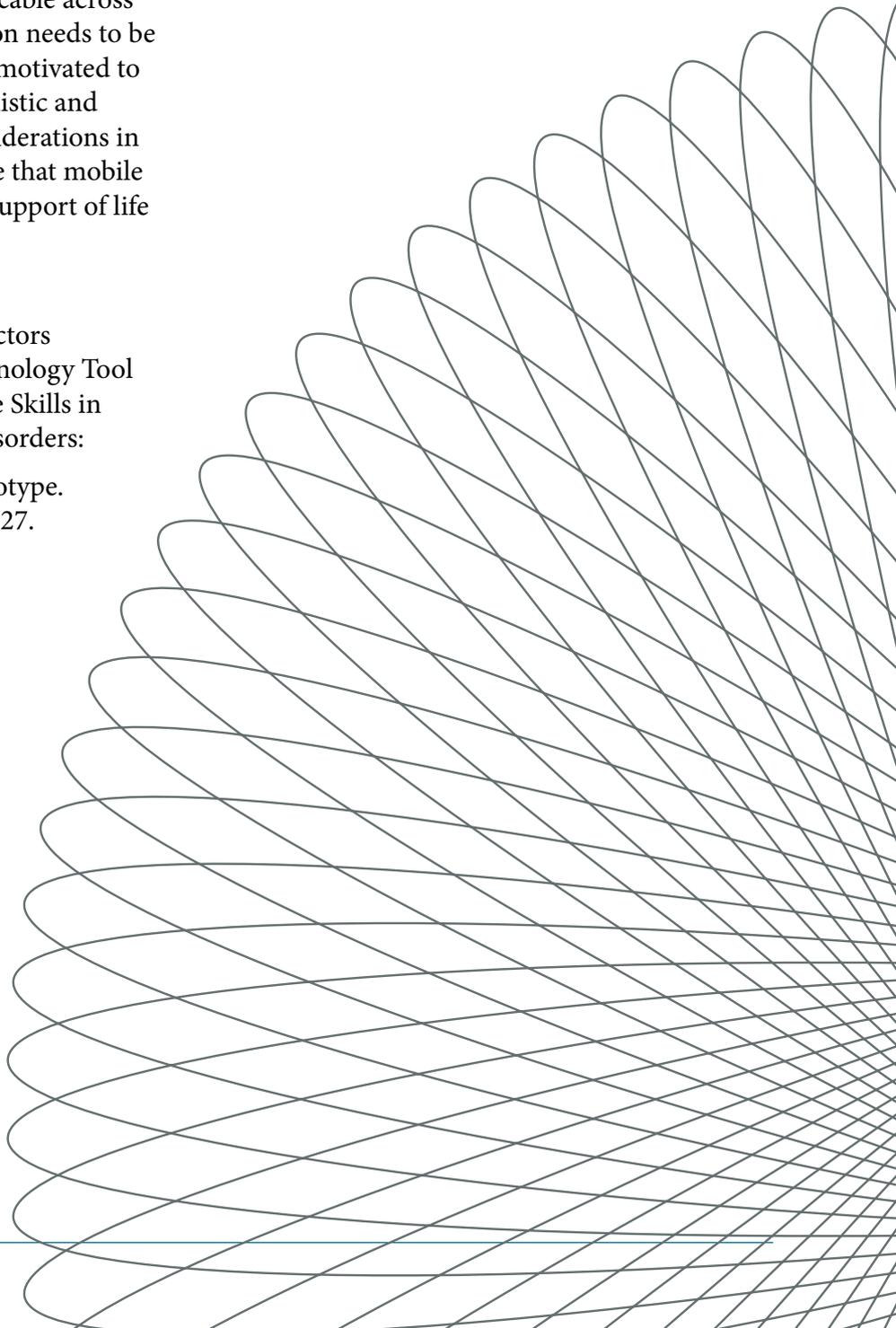
The results of this research are applicable across applications; the child / young person needs to be part of the process, they need to be motivated to change and the goals need to be realistic and reviewed regularly. With these considerations in place there is every reason to believe that mobile ICT supports can be helpful in the support of life and social skills.

Full Reference

Mintz, J. (2013). Additional Key Factors Mediating the Use of a Mobile Technology Tool Designed to Develop Social and Life Skills in Children with Autism Spectrum Disorders:

Evaluation of the 2nd HANDS Prototype. *Computers and Education*, 63, p. 17-27.

*n= sample size



CONCLUSION

The summarised articles above highlight that life skills are a varied set of skills that will change in relation to the developmental trajectory of the child. Life skills should be taught early and be a constant curriculum for all children. These skills enable the child to successfully navigate a range of practical, educational and social challenges.

The method of teaching life skills is an area of debate; what is a fairly constant finding in the research above is the importance of motivation. Motivation is key; regardless of the aim of the life skills lesson or the mode of delivery the child will only engage if they are sufficiently motivated to engage. While there are a range of ICT driven modes of delivery, parents and teachers should be aware that these are not always the answer, the first task is to determine what will motivate the child to engage.

ICT supports do seem to take out the personal 'nagging' element of working on specific skills and as detailed some children and young people responded well to the impersonal nature of ICT supports and modelling.

A word of caution would be not to depend totally on ICT approaches but to always have a regular one to one teaching / coaching input and programmes of teaching need to be reviewed regularly in order to match the child's own developmental trajectory.

Finally video modelling is often mentioned as an effective model and this does seem to be effective. Teachers and parents should bear in mind that short sequences may be best as some children may not have the short term memory capacity to hold long sequences of information – so shorter and repeated short sequences seem to be the best video modelling teaching tool.

Life skills are varied and individual to each child; they may also be a lifelong curriculum that should be reviewed and assessed as the child gets older and their life skills challenges change.

YOUR OPINION

The Centre trusts that you have found this Research Bulletin informative. It would be appreciated if you would take a few minutes to provide the Centre with feedback in relation to this bulletin by clicking on the survey link below.

Survey for Life Skills





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