



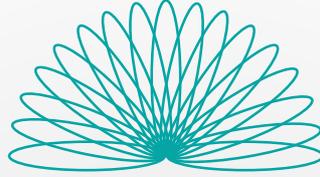
CENTRE FOR AUTISM
MIDDLETOWN

VISUAL STRATEGIES



RESEARCH BULLETIN ISSUE NO. 13

Supporting the promotion of excellence throughout Northern Ireland and Ireland in the education of children and young people with autism.



CENTRE FOR AUTISM
MIDDLETOWN

VISUAL STRATEGIES

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INTRODUCTION

This is the thirteenth 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 eleven articles related to the use of visual strategies in supporting children with autism. Articles are sourced from a range of peer-reviewed journals from the period 2010 to 2014.

The Bulletin commences with an interview with Lorraine Scott, Head of Learning Support and Assessment at Middletown Centre for Autism.

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.

AN INTERVIEW WITH LORRAINE SCOTT

1. Please tell us about your professional background?

I lead the Learning Support and Assessment Division at Middletown Centre for Autism. The team delivering this service works with children and young people with autism who, despite specialist intervention, are continuing to struggle in school. The team also trains parents and professionals in issues related to autism. Formerly, I was an Assistant Advisory Officer in the Southern Education and Library Board (SELB). Following this, I moved to the United States to work as a psychoeducational therapist, employed by the University of North Carolina, Division TEACCH, before returning to NI to lead an Autism Diagnostic and Intervention Service in the Southern Health Trust. My background is in teaching children with special educational needs. This led to my interest in working with children and young people with autism. In 2010 I gained a MEd in Special Education (Autism, Children) from the University of Birmingham and was privileged to be appointed as a member of the National Institute of Clinical Excellence (NICE) Guideline Development Group for Autism Screening and Diagnosis. I have recently been invited by the team at Division TEACCH to apply for Advanced Consultant Certification status in their programme.

2. What is the origin of using visual teaching strategies to help people with autism?

The use of visual strategies originates in Division TEACCH, based in the University of North Carolina in Chapel Hill. It is a clinical and educational programme promoting the concepts of independence, working with families, assessment and the individualisation of programmes. Dr Eric Schopler, the founder of the programme, discovered (through completing doctoral research) and working with families and individuals with autism that many people with autism learn best if information is presented in a visual format. The TEACCH* approach to intervention provides a framework for creating programmes that match the learning style and needs of individuals across settings and in all areas of life: work, leisure and self-care. From its inception over 50 years ago the structured teaching approach has evolved and developed and is now used in many countries across the world where it forms the basis of a great variety of clinical, educational, social and vocational programmes. Practitioners from around the world meet annually at the TEACCH Conference in North Carolina to share their experiences of using structured approaches.

*TEACCH now represents Teaching, Expanding, Appreciating, Collaborating, Co-operating and Holistic.

3. Why do many school staff and families use visual teaching strategies?

The strategies are widely used because they complement the learning style of many people with autism, fit with the home and school environments, can be used for siblings and other pupils and can be easily adapted to suit ability levels. Using these strategies does not rule out using other intervention methods, does not cost a lot or have a detrimental impact on other family members. The use of visual supports can have a notable impact on how a person with autism understands the world. Subsequently, family and school life can quickly become a more positive experience. Using visual strategies helps make expectations and abstract concepts more concrete for a person with autism. What is taught and how it is taught will apply differently to each person. Structured teaching approaches make sense of the environment and provides a 'bridge' between the non-autistic world and the world as it is experienced by people with autism.

In summary, school staff and families use visual supports because they are practical and they work.

4. There is an emphasis on evidence-based practice within the autism community. Is the use of visual strategies an evidence-based practice?

One of the core principals of the TEACCH approach is that it is empirically based; i.e. based on what we currently understand about autism as a lifelong condition. Parents, professionals and service providers put a high value on evidence for intervention so it is important that more resources are invested in research in this area. The evidence for using visual strategies however, is strong and evolving. The Journal of the American Academy of Child and Adolescent Psychiatry published a paper in February 2014 entitled, 'Practice Parameters for the Assessment and Treatment of Children and Adolescents with Autism Spectrum Disorder.' In it the authors cite two best practice methodologies that were developed by TEACCH and utilise visual strategies. Many of the other methodologies cited in the paper are also used within the framework of the TEACCH programme. Additionally, the philosophy of using visually based techniques is reflected in a chapter of a new book entitled 'Interventions for Autism Spectrum Disorders – Translating Science into Practice.' This chapter outlines why visual strategies work well and evidence for using them. There are numerous research articles comparing the outcomes of different methodologies (this bulletin will provide examples of these), but the evidence in fact is inconclusive.

INTERVIEW

5. The TEACCH programme originated in the 1960's and there are numerous intervention methodologies available now. Why is the use of visual strategies in teaching and learning still relevant?

The wider concept of teaching according to a student's learning style is a 'best practice' teaching concept today. The fact that students with autism often learn best through visual means has not changed through time, though we are now better informed as to why and how. Additionally, the TEACCH programme, (in which the methodologies are based) is constantly evolving as knowledge of autism increases through research and practice. This helps keep the intervention relevant. One of the main changes in the programme was the appointment of Dr Laura Klinger as the Director, which led to the modernisation of the brand, a refining of the strategic goals and a change of the acronym TEACCH (Teaching, Expanding, Appreciating, Collaborating, Co-operating and Holistic), which now reflects the core values of the programme. The TEACCH programme has always incorporated a number of intervention strategies but now these are highlighted. There is a relatively new focus on using complementary methods of visual structure alongside cognitive behavioural strategies. The programme also advocates the Early Start Denver Model as an effective programme for young children with autism. TEACCH still deliver many training programmes, which you can find on the website www.teach.com but now offer online certifications and have increased focus on adult services. They also have an accreditation programme of affiliated professionals across the world and have a more focused emphasis on research. The development of the programme impacts practice world wide for example, the use of visual strategies forms part of the 'Earlybird' and 'Earlybird Plus' training programmes developed and used successfully by the National Autistic Society to help families get informed and be empowered to support their children with autism. Training professionals and parents in the concepts of using visual strategies and structure helps ensure well-informed family and school based support for children and young people with autism.

6. Are these strategies useful for people with autism who are cognitively more able?

Visual strategies are useful for children, young people and indeed adults across the spectrum. Cognition is not the problem for people with high functioning autism but social communication is a core deficits of the condition and visual supports can help in this and many other areas of difficulties.

The unpredictability of daily life is a common source of stress for children and young people with autism; and at times of high anxiety, communication skills may be adversely impacted. If a verbal child or young person misunderstands an instruction it can look like challenging behaviour, rather than a language processing difficulty. If plans change, the use of visual strategies, taught on a daily basis, can help the child maintain a sense of wellbeing, cope with daily pressures and think more flexibly. The use of visual supports normally works alongside the child or young person's strengths and learning style. The team at Middletown Centre for Autism often uses visual strategies as a framework to teach important life skills such as coping with anxiety and understanding relationships.

7. Do visual strategies make children and young people with autism stand out as being different?

Children and young people with autism often 'stand out' as being differently due to their way of seeing and responding to their environment. Visual strategies help them to adapt to the demands of educational settings more easily as they provide support for skills such as keeping on task, being organised and asking for breaks. Visual strategies are useful for many children with communication or attention issues not just for those with autism. In mainstream settings small pocket timetables or electronic devices can be used. We all use calendars and visual supports to assist us in daily life (iPads, Smart Phones) and would be lost without them. The same principle applies to many children and young people with autism.

8. What is your advice for teachers or families who want to try using visual teaching strategies?

Decide on one strategy and go from there. Also access training because these interventions do not work like magic and have to be taught, preferably when your child or young person is having a good day. Whilst putting in place the structure that an individual with autism needs can initially be time consuming, the benefits in terms of improved communication, reduced stress levels and greater independence can, long term, make life enhancing changes.

Tell Me What You Did Today: A Visual Cueing Strategy for Children with ASD

RESEARCH AIMS

To investigate the effects of a visual cueing system on the ability of children with autism to retell the events of their school day to both school personnel and to family members. Visual cueing is described as visual strategies such as picture and word activity schedules that can help with the following areas:

- Understanding of activity/task
- Understanding of daily routine
- Peer engagement
- Social initiations
- Transitions
- General behaviour
- On-task behaviour

RESEARCH METHOD

Three children aged 5 years (2 boys, 1 girl) attending an inclusive preschool were selected to participate in this study. The children could communicate at sentence level, maintain attention to task for ten minutes and were able to independently follow a visual activity schedule in the classroom. Two of the children were diagnosed with pervasive developmental disorder (not otherwise specified) and one child was diagnosed with autism.

The visual strategy employed in this study involved a series of picture symbols combined with written comments and hand drawings, which the authors called a visual cueing system (VCS).

The VCS consisted of a sheet of paper with five rows. Each row contained an identical small grid of nine picture symbols with text labels of common daily events in the preschool (e.g. art, lunch, playground, etc.), followed by a blank line. The teacher could circle a symbol and write a simple phrase on the blank line when the activity was completed. The VCS was used in classrooms by preschool teachers during normal classroom activities. The rationale for this system was to create a VCS for the skill to respond to the prompt, "Tell me what you did today?"

The study consisted of four strands: baseline, intervention, generalisation and follow up.

Baseline: The preschool teacher asked the children "Tell me what you did today?" without use of the VCS.

Intervention: The preschool teacher wrote on the VCS during the school day, checking the child could read and understand the written phrase. At the end of the school day the children were given their VCS and the preschool teacher asked the child "Tell me what you did today?" If the child required prompting the preschool teacher asked the child "Tell me something else?"

Generalisation: During the generalisation phase the child used the VCS to tell a parent about his or her school day. The parents were instructed to ask the child "Tell me what you did today?" and to prompt the child if needed using the phrase "Tell me something else?"

Follow up: One month after completion of the study, the preschool teacher gave the children a VCS sheet with no written phrases at the end of the school day. The preschool teacher asked the child "Tell me what you did today?"

RESEARCH FINDINGS

Baseline: The average number of daily events reported by the children without a VCS was less than one.

Intervention: Compared to baseline, all three children demonstrated immediate and sustained increases in the ability to communicate what happened during their school day upon introduction of the VCS, reporting approximately five times as many events from the school day than during baseline.

Generalisation: All three children were able to generalise the skill. Compared to baseline, the children told their parents roughly four times as many daily events during generalisation.

Follow up: At follow up, two of the children reported at least three of the daily events to the preschool teacher and one child reported seven.

The preschool teachers in this study reported that they found the VCS "easy" (2/3) or "somewhat easy" (1/3) to implement. However, all three thought that it was "very important" for the

RESEARCH PAPER

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Tell Me What You Did Today: A Visual Cueing Strategy for Children with ASD

children to communicate the events of the day and for teachers to have tools to help children communicate.

IMPLICATIONS FOR PRACTICE

(by the reviewer)

It is thought that the visual strategies remove some of the sensory and cognitive demands placed on the child with autism during social interactions. By doing so, visual strategies can facilitate social communication between a child with autism and others.

Visual strategies could be used as a reference for children with autism to answer broad questions like “Tell me what you did

today?” within a social routine.

Visual strategies may help children with autism to generalise scripted phrases from one event to another.

Teachers could use VCS and assist the children with autism to create their own phrases for each activity sequence.

FULL REFERENCE

Murdock, L. C. and Hobbs, J. Q. (2011). Tell Me What you Did Today: A Visual Cueing Strategy for Children with ASD. *Focus on Autism and Other Developmental Disabilities*, 26(3) p. 162-172.

Use of an iPad Play Story to Increase Dialogue of Preschoolers with Autism Spectrum Disorders

RESEARCH AIMS

The authors aimed to use an iPad play story to increase the pretend play skills (specifically the play dialogue) of four preschoolers with autism.

RESEARCH METHOD

The play story utilised began with a slide with the text (and recorded speech), “Let’s play firefighter; touch each picture to hear the story, then you can pretend to be the firefighter and save the girl”.

The final slide read, “Now it’s your turn to be the firefighter”.

All data were collected during data probes consisting of two-minute play opportunities initiated by an adult saying “Let’s play with firefighters”.

Data were collected during four phases:

1. Baseline: participants engaged in the data probe with no instruction and without viewing the play story.
2. Instruction: participants were shown the play story, were shown how to touch the iPad screen to activate the dialogue, and were asked to say the lines of the characters.
3. Priming: prior to each data collection probe, participants viewed the play story once. No practice opportunities were provided and participants were not prompted to participate.
4. Generalisation: the procedure was identical to the priming phase but the participant was paired with a typically developing peer. Peers were asked to do their best to talk and play with the counterpart but no other peer training was provided.
5. Withdrawal: participants did not view the play story; procedures were identical to the baseline phase.

All utterances were transcribed from video and coded. The primary dependent variable was the number of play dialogue utterances, defined as those produced as character dialogue or verbalisations that animated the toys or action figures.

RESEARCH FINDINGS

To determine if there was a functional relation between the play story intervention and the target play dialogue, changes in behaviour between baseline and intervention (i.e. instruction and priming phases) were considered. Three of the four participants demonstrated low and stable performance during baseline and rapid response to intervention with initial steep improving slope during intervention phases. Thus, there was a clear functional relation demonstrating that the play story intervention had a positive effect on the children’s use of play dialogue, including the production of their own novel play dialogue. Additionally, regardless of how talkative participants were, they engaged in proportionately more symbolic play verbalisations following the intervention.

IMPLICATIONS FOR PRACTICE

(by the authors)

- Play is an integral part of typical preschool development and as such it is critical that children with autism develop symbolic play skills to interact with their peers and fully participate in the learning environment.
- As play skills are strongly predictive of emotional, social and linguistic skills, intervening to improve play skills may result in parallel growth.
- The National Research Council (2001) has identified functional, spontaneous communication as the primary goal of early childhood programmes for children with autism.
- Until recently, visual strategies have been implemented via static formats such as laminated paper; nevertheless, there is emerging literature that visual strategies delivered in electronic formats may be an effective means of intervening with young people with autism. However, interventions delivered in low-tech formats are easily adapted for use in digital formats.
- Electronic visual strategies have a number of advantages over their static counterparts including increasing attention and decreasing challenging behaviours. As they may be more appealing to individuals with autism, this population may be more apt to use them as self-cues.
- This study lends weight to existing research, which indicates that individuals with autism who are exposed to scripted utterances are often able to expand and modify scripts with a greater degree of independence.

RESEARCH PAPER

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Use of an iPad Play Story to Increase Dialogue of Preschoolers with Autism Spectrum Disorders

- The results of this study add to a growing body of research in visual strategies and specifically computer-based instructions to increase the independence of children with autism by allowing them to complete tasks without adult direction.
- Furthermore, it may be reasonable to investigate the use of play stories in settings other than those that are school-based, such as home and play groups, and with various implementers including teachers, therapists and parents.

FULL REFERENCE

Murdock, L. C., Ganz, J. and Crittendon, J. (2013). Use of an iPad Play Story to Increase Dialogue of Preschoolers with Autism Spectrum Disorders. *Journal of Autism and Developmental Disorders*, 43, p. 2174-2189.

The Home TEACCHing Program for Toddlers with Autism

RESEARCH AIMS

The aim of the study was to evaluate the efficacy of a parent training intervention for children (age 3) with autism based on the TEACCH model. The authors hypothesised that implementation of the programme would lead to changes in both parents and children relative to control groups, including increase in parental understanding of how to implement structured teaching, decrease in parental stress, and positive effects on observed child behaviour during TEACCH sessions and on developmental outcome measures.

RESEARCH METHOD

Twenty families with 2-3-year-old children with autism were participants in the study. Families were paired based on chronological age and developmental age of the child, and were randomly assigned to either treatment or “waitlist” conditions. In the waitlist condition families did receive the training intervention, but after a 12-week wait period.

Data were collected via monthly videotaped sessions of parent-led teaching in both treatment and waitlist families’ homes. Parents were provided with a home teaching kit with tasks geared towards fine motor, cognitive, play, problem-solving and communication skills. Those in the treatment condition also received training in the TEACCH method, whereas those in the waitlist condition did not receive this until later. Videos were coded at 10-second intervals analysing: 1.) parent behaviour (ineffective versus effective prompts), and 2.) independent functioning of child.

Child developmental outcomes were measured at pre- and post-treatment using the Mullen Scales of Early Learning and Scales of Independent Behaviour -Revised. Parental stress was assessed using the Parenting Stress Index, 3rd edition. Those assigned to the home teaching programme group met with a clinician for 1.5 hours per week for 12 sessions. Sessions consisted of the clinician working with the child to teach specific cognitive, fine motor and language skills while modelling methods of prompting and setting up the physical structure of the learning environment. The clinician then demonstrated how to fade back prompting to promote independent task completion. Parents were also provided with 30 minutes of education about autism, and completed

weekly homework tasks designed to apply new skills between treatment sessions. During the last four sessions parents took a more active role in the teaching time with their child. After waitlist families were assessed on post-treatment measures they had the opportunity to participate in the home teaching programme.

RESEARCH FINDINGS

Use of the home teaching programme was associated with clear increases in levels of independent functioning in the majority of families, and with an increase in parent set-up behaviours (i.e., increased use of physical structure) in all cases. Use of effective parental prompts increased and ineffective prompts decreased across treatment groups. In terms of developmental gains as measured by the Mullen Scales of Early Learning and Scales of Independent Behaviour, medium to large effect sizes were noted for the treatment group; however, comparisons between treatment and waitlist conditions failed to reach statistical significance. Parent stress decreased slightly for those in the treatment group, and increased slightly for those in the waitlist condition (however, differences were not statistically significant).

IMPLICATIONS FOR PRACTICE

(by the authors)

- Participation in the home teaching programme for parents of 2-3 year olds with autism led to improvement in children’s independent work skills and parental ability to structure the environment for learning, as well as their ability to use effective prompts while teaching. This has important implications in that the increase of independently carrying out a simple behaviour chain may be generalised to a broader range of activities and settings. Increased use of effective prompting may also reduce challenging behaviours, and conserve parental time and resources.
- Some improvements in child development and parental stress are indicated (although the study is perhaps underpowered for group comparisons in this area). Future studies with a larger sample are warranted, and with a longer or more intensive intervention period in order to comment further on change in global developmental skills

RESEARCH PAPER

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The Home TEACCHing Program for Toddlers with Autism

of children and parental stress levels.

- The suggestion is made that further breakdown of the home teaching programme could yield results pertaining to which aspects of the programme are specifically responsible for change, and whether increased or decreased intensity of some components of the programme leads to differing outcomes for parent and child measures.

FULL REFERENCE

Welterlin, A., Turner-Brown, L. M., Harris, S., Mesibov, G. and Delmolino, L. (2012). The Home TEACCHing Program for Toddlers with Autism. *Journal of Autism and Developmental Disorders*, 42, p. 1827-1835.

Video Feedforward for Rapid Learning of a Picture-based Communication System

RESEARCH AIMS

This study examined the efficacy of video self-modelling (VSM) using feedforward, to teach various goals of a Picture Exchange Communication System (PECS). In this instance, “feedforward” refers to video images of behaviours that have not previously occurred in the context seen. Feedforward can be created by filming component behaviours and reconfiguring them, with editing, into apparently novel skills. In contrast to feedback, feedforward presents a future action of skill to achieve a valued goal.

RESEARCH METHOD

The study used single case experimental design. Participants included one adult male with Down’s syndrome and two children (aged 9-11) with autism. All were non-verbal but had some receptive language skills.

A self-modelling video using feedforward was made individually for each participant and tailored to his specific picture communication goals. Each participant’s video depicted him performing his target behaviour independently. Only target skills/components (without verbal or physical prompts) were included in the final video. Each participant watched his video on a laptop, after which measures were taken of the target behaviour.

RESEARCH FINDINGS

All three participants showed rapid learning of their target behaviour when introduced to their self-modelling videos and the effects were generalised without the need for further intervention. The three participants learned their target picture exchange goals mostly in two to five viewings across one to four weeks.

Two classroom assistants and a speech and language therapist who were involved in the research responded to social validity questionnaires regarding the intervention. The responses were all positive, unanimously indicating that they would recommend and use the intervention again in the future.

IMPLICATIONS FOR PRACTICE

(by the authors)

- Functional communication is key to a positive quality of life; without such skills, problem behaviours including tantrums, screaming or rigid routines may be the only ways that some individuals can convey what they need or dislike, or gain some control over their world.
- The authors propose that VSM, using feedforward, can provide a fast, simple way of teaching the use of PECS without the need for prompts or intensive operant conditioning. VSM may provide an accessible, easy to use alternative to common methods of teaching augmentative and alternative communication systems.
- VSM may assist individuals who have struggled to progress with augmentative and adaptive communication systems, particularly those who have become prompt-dependent, such as the participants in this study.
- Highly technical, electronic systems that produce speech are often too complex for individuals with severe learning disabilities.
- Video modelling has the advantage that it can highlight to the observer the salient features of behaviour and filter out extraneous information that may interfere with learning; this is particularly relevant to individuals with autism who often display “stimulus overselectivity”, in which they pay attention only to small parts of relevant cues in their environment, thus missing the “bigger picture”.
- Results indicate that VSM interventions may produce faster, larger outcomes than peer or other modelling.
- It is also noteworthy that when staff watched the self-modelling videos, they immediately remarked that they would now raise their standards of expectation of the children after seeing their potential capabilities. This happened in spite of staff being aware that the footage had been created from a composite of separate videos. Consequently, VSM became a teaching tool for staff as well.

FULL REFERENCE

Smith, J., Hand, L. and Dowrick, P.W. (2014). *Video Feedforward for Rapid Learning of a Picture-based Communication system. Journal of Autism and Developmental Disorders*, 44(4), p. 926-936.

Using Social Stories and Visual Schedules to Improve Socially Appropriate Behaviors in Children with Autism

RESEARCH AIMS

Social Stories are an intervention that aims to address social skills issues for children with autism. They are short stories that outline a social situation and the desirable and undesirable behaviours that are associated with this event or context. The aim of the study is to evaluate the impact of Social Stories on “on-task” behaviour for children with autism. A second phase of the study aimed to address whether “on-task” behaviour was further increased through the use of a visual schedule addressing the elements of the story.

RESEARCH METHOD

Social Stories were developed relating to the increase of “on-task” behaviour for three pupils with a diagnosis of autism aged between 5 and 10 years old. All three pupils demonstrated regular off-task behaviour prior to intervention, presented with impaired verbal or social communication skills, and had not previously received any intervention to address their off-task behaviour. One Social Story was written for each child, and all were reviewed by two speech and language therapists in order to check for adherence.

Baselines for behaviour were obtained via observations of the target behaviour during regular classroom routine pre-intervention. A multiple baseline design across participants was utilised and duration of treatment phase was variable. During the treatment phase each child was read their own Social Story on a daily basis before the targeted routine (for example circle time) across 21 sessions. The child was asked questions regarding what should happen during the routine that would follow, in order to assess their comprehension of the story. The targeted routine was then observed and coded as on-task or off-task at 10-15 second intervals. Reliability was checked on 25% of observations by a secondary coder. Inter-observer agreement varied from 88-96% across the three participants.

Following the initial treatment (Social Story) phase, a visual schedule incorporating the target behaviours involved in the target routine replaced the use of the story for one participant only for 34 follow-up sessions.

RESEARCH FINDINGS

During baseline observations the percentage of pupil time coded as “on-task” varied from 29-60%. During the Social Story treatment phase this percentage of on-task behaviour rose to 50-76%. For the pupil who was then provided with follow-up phase 2 treatment (visual schedule), the percentage of on-task behaviour rose from 50% following the social story intervention to 72% with the use of visual schedule to support the story.

IMPLICATIONS FOR PRACTICE

(by the authors)

The main implication for practice arising from the paper is that Social Stories have been shown to be effective in boosting on-task behaviour. Some behaviours may be further improved when they are accompanied by a visual schedule of the key steps/points within the story. This may provide a concrete visual reminder during the target situation, which has an advantage over relying upon the child’s memory of the story in-situ.

The authors indicate a number of areas for future research and development:

- Further study regarding the optimal parameters of Social Story intervention (for example the effect of reading the story numerous times per day versus just once, and how long the “treatment” phase of reading the story daily should last) is needed.
- Further research examining the effect of timing of when the Social Story is read is also required (for example immediately prior to the situation, or during).
- The effects of reading multiple different stories directed at the same target behaviour should be examined.
- Future research should evaluate the difference between sequential and non-sequential routines, and the effects of static and dynamic Social Story systems.
- Comparison studies examining the effect of Social Stories on individuals who are neuro-typical versus those with autism are warranted.
- Finally, the authors suggest experimentation regarding the efficacy of Social Stories that utilise sentence ratio versus those that do not adhere to these guidelines, in order to determine if either is more effective.

Using Social Stories and Visual Schedules to Improve Socially Appropriate Behaviors in Children with Autism

FULL REFERENCE

Schneider, N. and Goldstein, H. (2010). Using Social Stories and Visual Schedules to Improve Socially Appropriate Behaviors in Children with Autism. *Journal of Positive Behavior Interventions*, 12(3), p. 149-160.

Supporting the Play of Preschoolers with Autism Spectrum Disorders: Implementation of Visual Scripts

RESEARCH AIMS

The aim of this article was to describe the research basis for the use of inclusive preschool playgroups and visual scripts with children with autism spectrum disorders (ASD) with the aim of promoting communication skills. This article also provides a step-by-step guide to implementing scripts within inclusive preschool playgroups.

RESEARCH METHOD

This article provides a synopsis of visual strategies and scripts as compiled by the authors.

RESEARCH FINDINGS

Individuals with autism often learn information more easily when it is presented in visual format. The use of visual strategies, such as written or pictorial scripts, can help children with autism to comprehend rules or expectations. Visual strategies have also been shown to be effective in addressing social and communicative skills in individuals with autism. They can also assist children with autism in knowing what to say in social situations.

Visual scripts are implemented in a natural setting in activities in which the child would usually be expected to display language skills, as opposed to a clinical setting. It incorporates visual cues in addition to auditory cues, which are too transient.

IMPLICATIONS FOR PRACTICE

(by the authors)

The authors provide guidelines for the implementation of visual scripts in inclusive playgroups:

1. Choose theme and prepare setting and materials:
The authors note the importance of ensuring playgroups should take place in a classroom pretend play area and be surrounded on all sides by walls or child-size furniture. They also recommend choosing activities that are familiar to or favoured by the children. Teachers should have multiples of each item required to increase opportunities for imitation.
 2. Choose learner objectives for each child with ASD:
The teacher should use the child's Individual Education Plan (IEP) to choose language and social objectives for each child with autism. If a language assessment has been carried out on the child, this can also be used to write appropriate goals and objectives.
 3. Write the child's script:
The script should be written based on the reading and language abilities and attention span of the child. The scripts should be typed in a font size that is appropriate to the child's reading ability. Each phrase should be matched with a picture unless the child is a very proficient reader. Each script card should include only one phrase and picture, and should be laminated and printed on hard card.
 4. Teach the script to the child:
The child should be taught the script on a one-to-one basis with the adult, prior to participation in the playgroup. The same level of prompting used during instruction should be used during the playgroup sessions. The child should receive a high level of positive reinforcement for participation. New phrases can be taught to the child once a phrase has been mastered. The authors recommend having the children with autism practice each mastered and new phrase prior to participation in each playgroup.
 5. Develop peer instruction cards and teach them to typically developing peers:
The purpose of peer instruction cards is to provide guidance and suggestions for typically developing peers for how to interact with children with autism who may not respond or communicate in traditional ways. Peer instruction cards should be introduced one at a time, until the children are using the skills noted on the cards.
 6. Script implementation during playgroups:
Playgroups should occur about three to five times a week to provide frequent opportunities for practising social skills. Each session should last approximately 20 to 45 minutes, depending on the children's attention span. Each theme should be implemented for about 5 to 10 sessions.
- Children with autism who are pre-verbal may require minor adaptations to the steps of implementing scripts. Such children should be placed in playgroups with only one typically developing peer, as the child with autism may be excluded if two or more typically developing peers are present.

Supporting the Play of Preschoolers with Autism Spectrum Disorders: Implementation of Visual Scripts

In addition, shorter scripted phrases and fewer phrases may be more manageable for younger and less verbal children with autism. It may also be appropriate to teach the typically developing peers, rather than the adult, to prompt the child with autism.

It is essential that reinforcement is high for children with autism and their typically developing peers. Reinforcements

should be chosen according to the individual interests of each child.

FULL REFERENCE

Ganz, J. B. and Flores, M. M. (2010). Supporting the Play of Preschoolers with Autism Spectrum Disorders: Implementation of Visual Scripts. *Young Exceptional Children*, 13(58), p. 58-70.

Virtual and Concrete Manipulatives: A comparison of Approaches for Solving Mathematics Problems for Students with Autism Spectrum Disorder

RESEARCH AIMS

The researchers sought to determine the efficacy of academically-based mathematical instruction to teach subtraction to three children with autism aged 6-10 years.

The researchers used concrete objects (e.g. physical objects that can be manipulated) and virtual objects (e.g. 3D objects from the Internet that can be manipulated).

RESEARCH CONTEXT

The researchers indicate that little research explores academically based mathematics instruction for children with autism. Research published in relation to academic supports for children with autism mostly addresses functional, communicative and life skills style tuition and support. The researchers indicate that there is a need to provide academic and subject-related teaching supports for children with autism as the majority of children with autism in the United States are now educated within a mainstream classroom.

The researchers provide additional information on the nature of the visual supports used. Concrete manipulatives are standard practice and commonly associated with mathematics education. Virtual manipulatives are three-dimensional objects that appear on a computer screen and can be transformed in multiple ways by the user.

RESEARCH METHOD

Three male students with a diagnosis of autism participated in the study; they were aged from 6-10 years. They were chosen based on the following criteria:

1. Inability to solve one- or two-digit subtraction problem
2. Possession of sufficient fine and gross motor movement to use concrete and virtual manipulatives.

The students were required to alternate between the use of concrete and virtual manipulatives to support solving a

range of mathematical subtraction puzzles. The students' performance using the manipulatives was measured against a baseline performance recorded prior to the use of manipulatives, and against each other. The results were subject to statistical analysis in order to determine any significant differences.

RESEARCH FINDINGS

The researchers indicate that both forms of visual supports were effective in promoting subtraction skills with the three students. Virtual manipulatives were slightly more effective than concrete manipulatives; they also generalised more effectively and had a longer lasting supportive impact than concrete manipulatives.

All of the students became increasingly more independent as they used the supports and their mathematical skills improved.

IMPLICATIONS FOR PRACTICE

(by the authors)

- Both virtual and concrete manipulatives can be effective in teaching mathematical skills.
- Use of virtual manipulatives is enhanced by the free resources in the National Library of Virtual Manipulatives.
- The researchers note that the students in this study were more motivated by the animations and technology used with the virtual manipulatives.

FULL REFERENCE

Bouck, E., Satsangi, R., Taber Doughty, T. and Courtney, W. (2014). Virtual and Concrete Manipulations: A Comparison of Approaches for Solving Mathematics Problems for Students with Autism Spectrum Disorder. *Journal of Autism and Developmental Disorders*, 44, p. 180-193.

Use of Activity Schedule to Promote Independent Performance of Individuals with Autism and Other Intellectual Disabilities: A Review

RESEARCH AIMS

The literature review aimed to ascertain the effectiveness of activity schedules in promoting independence and self-management skills in children and young people with a range of learning difficulties including autism. Such skills are seen as important within any educational or vocational setting. The study aimed to derive implications for use of activity schedules based on population of use, symbol type used, and any notable behaviour change: engagement, disruption, task initiation or transitions and learning to self-schedule.

RESEARCH METHOD

The authors conducted their literature review through “PsycInfo” and “Google Scholar”, using the key words “activity schedule”, “visual schedule” and “picture schedule”. The following criteria for inclusion were set: The studies must be from peer-reviewed journals, be experimental studies, implement activity schedule as a primary intervention strategy alone or in combination with other instructional strategies, use a schedule to represent multiple activities, aim to teach learners to self-manage individual schedules, and be studies where individuals were unfamiliar with activity schedules at the beginning. The reviewers did not use object references within their criteria or literature search, which could mean that they assumed that a minimum level of symbol understanding was required to master an activity schedule, maybe implying that the individual must have a certain level of cognitive ability to make the association between a two-dimensional visual cue and its representation.

Articles reviewed

Twenty three studies, creating 253 cells from 11 categories, from 1997 until 2009, representing 69 individuals from 3 to 40 years with a range of learning difficulties including autism, were found and analysed. The authors yielded reliability of 95.7%. The studies came from a variety of settings: home (17.4%), group setting (8.7%), school (60.9%), job site (4.3%) and unspecified other (8.7%). The studies also represented a range of activities: academic (13%), leisure or play (26.1%), self-help (8.7%), vocational tasks (17%) and various for more than two already mentioned activities (39.1%). However, it must be noted that the activity schedules were not used to teach the activity, merely to transition to and

between them.

RESEARCH FINDINGS

The authors found from their analysis that activity schedules in a visual format, irrespective of age, diagnosis or cognitive ability, can be useful tools in promoting independence and, possibly, self-determination of individuals with cognitive challenges. The visual formats analysed were photographs, line drawings and written words, with the written words yielding fewer successes proving to be the weakest association for the individuals. Furthermore, the results from six studies indicate that individuals who learn to effectively use an activity schedule are more likely to apply it in different situations.

A key finding was that the use of activity schedules promoted independence across the settings, even in the absence of supervisors, and also increased engagement in the group or home settings, when choice was also provided within the schedule. Of the twenty three studies, fifteen reported an increase in the rate of engagement, eight studies demonstrated a decrease in disruptive or self-injurious behaviour, seven studies showed how individuals were able to increasingly learn to self-schedule, and a further seven studies recorded independent task initiation and transition.

However, it may be argued that an increase in time spent on task engagement may ultimately lead to a decrease in inappropriate behaviour.

Seven studies remarked on the generation of smoother transitions with the use of activity schedules. Greater independence was demonstrated through the teaching and design of self-schedules by the individuals making activity choices, by seven studies. It was also remarked that following a pre-arranged schedule could be seen as compliance rather than the acquisition of the more flexible skill of independence.

Out of the twenty-three studies reviewed, seven examined social validity with all reporting positive results from teachers, job coaches and caregivers.

RESEARCH PAPER

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Use of Activity Schedule to Promote Independent Performance of Individuals with Autism and Other Intellectual Disabilities: A Review

IMPLICATIONS FOR PRACTICE

(by the authors)

- In support of activity schedules, with their use increasing and improving engagement, it is important to note that children's level of engagement is correlated with development in communication and social skills as well as reduction in inappropriate behaviour.
- One study found that their participants' rates of on-task behaviour dropped to the baseline level when activity schedules were removed. Reinstitution of activity schedules immediately raised performance back to the post-intervention level, thus demonstrating that the use of the activity schedule sustained on-task behaviour.
- The use of activity schedules is effective when supporting students to transition between activities and can lead to a greater level of independence, with the goal being self-transition without adult intervention.
- Teaching self-scheduling is important in respect of promoting autonomy and self-determination of individuals with learning differences and difficulties.
- When the principles of using an activity schedule have been taught and learned, individuals can then use different activity schedules to complete different tasks at different times, thus the acquisition of a learning technique.

FULL REFERENCE

Koyama, T. and Wang, H.T. (2011). Use of Activity Schedule to Promote Independent Performance of Individuals with Autism and Other Intellectual Disabilities: A Review. *Research in Developmental Disabilities*, 32, p. 2235-2242.

A Comparison of Picture and Video Prompts to Teach Daily Living Skills to Individuals with Autism

BACKGROUND

Visual supports such as pictures, text, photographs and video-based materials are frequently used to assist individuals with autism to make sense of the environment, social situation or activity with which they are faced. This study compared picture prompting and video prompting.

Picture prompting involves a series of pictures sequentially arranged to represent the steps involved in a task. The individual can reference and follow each picture during the task.

Video prompting involves showing a video clip of each step involved in the activity. The individual is given time after each video clip to carry out each step until the sequence of clips and task are finished.

RESEARCH AIMS

The purpose of this study was to compare the effectiveness of picture prompting and video prompting to teach daily living skills to two adolescents with autism.

RESEARCH METHOD

Two male students aged 13 and 14 years with mild to moderate intellectual disabilities participated in this study. The adolescents were taught two different skills (folding laundry and meal preparation). Each adolescent used picture prompting for one skill and video prompting for the other. Both tasks were similar in length and number of steps. The study consisted of three strands: pre-tests, intervention and post-tests.

Pre-tests: Both adolescents were instructed to complete a task, e.g. make pasta or fold clothes. No other instruction or visual prompt was given.

Instructional sessions: Prior to the instructional sessions, each adolescent was taught how to use the picture and video prompts independently. Each adolescent participated in 10 instructional sessions. During the instructional sessions the adolescent was given the verbal cue to “fold clothes” or “cook pasta”. The adolescents used the prompts (either the video or

picture prompt) and carried out the tasks.

Post-tests: After the instruction sessions, post-tests using the same verbal cues (only this time without visual prompts) were carried out in a different room to the instructional sessions. Post-tests were carried out at two days post and six weeks post instructional sessions.

RESEARCH FINDINGS

Picture prompts and video prompts were both effective in increasing independent responding for both participants.

When compared to baseline measurements, video prompting appeared to be more effective than picture prompting for both participants.

Both participants could independently perform the skill sequences, using no visual prompts, two days post the instructional sessions.

Six weeks post the instructional sessions, one participant could demonstrate generalisation and maintenance of both skills using no visual prompts. The other participant could only demonstrate generalisation and maintenance of one skill using no visual prompts. Both skills taught with video prompting were maintained by both participants.

Both adolescents reported that they liked using both visual prompting methods. When asked which they preferred, they both indicated that they preferred using the videos and would like to use them again in the future.

IMPLICATIONS FOR PRACTICE

(by the authors)

Although the video prompting appeared to be more effective for these participants, both strategies when used improved independence and success with each task.

When choosing visual strategies the child's preference, equipment needed and environment should be considered. For example, it is not always practical or feasible to use video prompting, and some children may not respond well to videos.

RESEARCH PAPER

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A Comparison of Picture and Video Prompts to Teach Daily Living Skills to Individuals with Autism

This study raises interesting possibilities of using visual technology to support learning for adolescents with autism and opens up opportunities for future research using hand-held technology devices.

FULL REFERENCE

Van Laarhoven, T., Kraus E., Karpman, K., Nizzi, R. and Valentino, J. (2010). A Comparison of Picture and Video Prompts to Teach Daily Living Skills to Individuals with Autism. *Focus on Autism and Other Developmental Disabilities*, 25(4), p. 195–208.

Using Visual Supports with Young Children with Autism Spectrum Disorder

RESEARCH AIMS

The purpose of this summary is to provide descriptions of the important characteristics of visual supports and considerations to reflect on when designing visual supports for young children with ASD.

RESEARCH METHOD

The researchers examined several types of visual representations to assist children with autism.

RESEARCH FINDINGS

Real Objects

Using tangible illustrations of activities can help children understand what activity will happen next or what choices are available to them. Objects can be selected with the children or through observing the children in their own natural environment. For example, if you observed a child on the playground you might select an object such as a ball that may have relevance for the child within this environment. This selection can help children feel more in control and help the child make the connection between the activity and the object.

Photographs

Pictures and photographs are an excellent way of designing visual schedules for children. Activities and routines can be easily represented through the use of digital photographs, clip art, or pictures that can be easily downloaded from the Internet. If a digital camera is not available, visual schedules can also be easily created through the use of photographs from magazines or other computer-generated pictures. Photographs can also be individualised for children, although this can be a time-consuming exercise.

Line Drawings

Line drawings are also suitable for using on visual schedules. These can be created through computer programmes or pictures can be drawn freehand. Boardmaker™ is an example of a commercially available programme that is useful for creating line drawings. Computer programmes can, however, be extremely comprehensive and can be very expensive.

Words

Words can be used in isolation, or paired with other visual representations such as photographs, drawings, or objects to help increase print awareness and aid the development of reading skills. Through pairing words with other visual representations, the transition from object and photograph schedules to word-only schedules can be achieved easier. A print-only schedule may look complicated to a young child; however, presenting print with pictures or objects can help build the foundations for later learning. Attaching words to other visual representations can support parents or other caregivers in using similar language during instruction.

Static, Dynamic, and Interactive Visual Supports

When designing visual supports, in addition to deciding on the type of representation to be used (e.g., photographs, line drawings) the form of the visual support should also be considered. Visual supports could be as follows:

- Static and include only print- or object-based supports
- Dynamic and include a variety of multimedia sources in addition to visual input (e.g., sounds)
- Interactive and include multimedia input that requires child involvement.

A range of technologies are available to use when developing static visuals, such as Boardmaker™, PixWriter and ToonDoo. When developing dynamic visuals, technology such as Boardmaker™ Plus, Clicker 5 and Intellitools are useful. Interactive visuals can be easily created through the use of technology such as Udu, Boardmaker™ Speaking Dynamically Pro and PowerPoint.

A number of factors should be considered when selecting visual supports, for example cost, time needed to prepare the materials, personnel to teach the child and adults how to use the visual support, and the comfort level of staff and family members with using the tools that will provide the visual supports. Each of these factors influences the form of visual support selected for use.

Types of Visual Supports

There are many types of visual supports that have proven effective and are typically available to young children with ASD. Within many early childhood programmes and home settings supports such as daily schedules, scripts or various

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Using Visual Supports with Young Children with Autism Spectrum Disorder

types of task analysis are part of the daily curriculum and children's routines.

Visual Schedules

Visual schedules such as a daily schedule or mini-schedule can assist children with disabilities by helping them anticipate the order of events and activities, and in turn this can help increase their independence. There are several ways that visual schedules can be used:

- To illustrate what activity is taking place
- To specify what activity will occur next
- To indicate when an activity is finished
- To identify any changes that might occur in the regular schedule.

Visual schedules apply the first/then approach in which the child is shown how to follow a set routine by achieving one task before moving on to the task that follows.

Visuals to Structure the Environment

A child with ASD can function more independently if visuals are used to structure the environment, as they can decrease their need for adult prompts to complete daily tasks. Images and symbols can be used to visually organise the environment and to represent the specific places where items belong.

For example, laminated photographs of different sized blocks can be placed on the shelves to help organise the block area during tidy up and independently help children to put the blocks away in the right location. Parents can also place picture labels on shelves and drawers within a playroom to help them tidy up. Visual images can also help identify tasks that are completed at specific locations. For example, the use of a basket for notes to the teacher might have a photograph of the teacher attached to it.

Visual Scripts

These refer to written scenarios or examples that children can use to initiate conversations and interactions with others. Visual scripts are useful for helping children develop social skills, especially amongst those children who display social difficulties.

Rule Reminder Cards

This is another example of a visual support that can be used to visually present expectations for behaviour in a variety of

settings. For example, classroom expectations could be visually represented on a poster board with photographs, words or line drawings. This can help children learn what behaviour is acceptable and unacceptable, and what happens as a result of desirable and undesirable behaviour. Visual rule reminders can include one picture or symbol, such as a STOP sign, or alternatively they can include several pictures or symbols, such as rules to follow when using the toilet.

Visual Task Analysis

A visual task analysis can be used as a step-by-step support to aid children to independently complete simple everyday tasks such as putting their clothes in the laundry basket. The visual task analysis can also be used to complete more complex task that are composed of multiple, sequential steps such as brushing teeth. By providing children with an accessible, visual reference you can improve a child's independence and decrease or eliminate adult prompting. This type of visual is particularly useful for children who forget or confuse the order of a multi-step process, who become easily distracted, or who have become dependent on input from an adult. Taking photographs of the child completing the steps promotes the child to the "role model" of independent behaviours.

IMPLICATIONS FOR PRACTICE

(by the authors)

For young children with ASD, visual supports are a fairly non-intrusive intervention strategy that can be individualised to provide help in social and behaviour learning. The authors highlighted guidelines for developing visual support for young children with ASD:

1. Identify the purpose for using visual supports. It is important to start with identifying the goal for using visual supports. For example, the use of a visual schedule could help children anticipate what is coming next, or a visual task analysis could assist in anticipating the steps within a specific routine. It is also important to have an understanding of the available choices and the arrangement of the environment. Parents, teachers and other professionals need to identify the target behaviour and then select a visual support that matches this behaviour. By developing individual or group goals for using a visual schedule, progress can be evaluated and necessary

Using Visual Supports with Young Children with Autism Spectrum Disorder

modifications can be made.

2. Identify the type of visual support. Once the goal for using a visual support is decided upon, the type of visual support (e.g., visual schedule, visual task analysis, visual rule reminder) is then chosen to target the chosen behaviour. For example, as a result of using a visual task analysis the individual may show an increase in independence and control throughout a class routine.
3. Assess the type of visual representation. Visual supports can include real objects, photographs, line drawings, words or a combination of these representations. What you choose should be based on group or individual needs and interests. Using words alone may be more suitable for older students, whilst photographs or photograph-word combinations may be better suited to young preschool children. Experimenting with various types of visual representations will assist in helping to make the right choice with what works best for an individual child or group of children.
4. Create the visual support. A variety of materials can be used. For example, a child's schedule could be made using a strip of Velcro on a manila folder with a variety of pictures of daily activities and stored in an envelope attached to a manila folder. When creating visual supports, bear in mind the child's needs for durability and portability.
5. Teach the child how to use the visual support. It is important to show children how to use the visual support. Direct teaching of how to use visual supports allows children to gain opportunities to practice making connections between images and routines and how to operate using the actual visual support.
6. Assess and adjust the visual support. To measure the effectiveness of the visual supports, it is important to collect data and evaluate changes in the child's behaviour. If the visual support does not appear to be achieving the desired goal, adjustments and modifications should be made.

FULL REFERENCE

Meadan, H., Ostrosky, M. M, Triplett, B., Michna, D. D. and Fettig, A. (2011). Using Visual Supports with Young Children with Autism Spectrum Disorder. *Teaching Exceptional Children*, 43(6), p. 28-35.

Effects of Peer-Mediated Implementation of Visual Scripts in Middle School

RESEARCH AIMS

Individuals with autism can often experience difficulties in social situations. Two strategies that have been used to improve social skills for children with autism include scripts and peer-mediated interventions.

Scripts are usually a written scenario detailing a conversation on a specific topic. Scripts can also be supplemented with visual images. This type of intervention usually begins with a training session in which the child with autism is taught the script via behavioural prompting techniques and prompt fading until the child can recite the script unprompted.

Peer-mediated interventions involve teaching a peer and the child with autism how to interact with each other by prompting, reinforcing and modelling appropriate skills.

This study investigated the effects of peer-implemented scripts on the social communicative behaviours (questioning, praising and asking for help) of a middle school student with autism.

RESEARCH METHOD

Three participants were recruited by a teacher who worked in a special education school. One participant, Barbara, was 15 and diagnosed with intellectual disability, autism and speech impairment. Two typically developing middle school peers, Debby and Emilia, who volunteered in Barbara's class, were randomly assigned as the trained peer (Debby) and untrained peer (Emilia).

Data collection took place in a private room across two periods of time: baseline and intervention with a trained peer. Generalisation data were collected during both periods and involved an untrained peer. During each time period two researchers observed and collected data on the communicative responses (questions asked, praise and asking for help) from Barbara.

Baseline: Debby and Barbara were presented with a craft activity and instructed to interact as usual. No script was provided.

Intervention: Debby was trained prior to each session

with Barbara on use of scripts, prompting, modelling and fading techniques. Debby and Barbara practised the scripts; the scripts were accompanied by visual images. Intervention sessions involved Debby and Barbara working through the script while performing a craft activity for up to three minutes; the script was placed on the table during intervention. Intervention sessions concentrated on three communicative behaviours: questions, praise and requesting help. Debby and Barbara focussed on each communicative behaviour for 14 sessions (42 sessions in total), followed by 24 sessions of fading prompted material.

RESEARCH FINDINGS

Barbara used each communicative behaviour (questions, praise and asking for help) very infrequently, if at all, during baseline data collection.

During intervention while Debby (the trained peer) used prompts, Barbara's use of questions, praise and requesting help increased by an average of 33%, 21% and 18% respectively. However, when Debby faded or removed the prompts out of intervention sessions, Barbara's use of the communicative behaviours dropped to levels similar to baseline level.

During generalisation sessions with Emilia (the untrained peer) Barbara seldom or never used the communicative behaviours. However, during generalisation sessions it is unclear if Barbara had access to the script.

IMPLICATIONS FOR PRACTICE

(by the authors)

This study demonstrates that peer-mediated interventions are achievable with middle school age students.

Peer-mediated scripts may facilitate interaction and communication between children with autism and their peers, thus providing a more naturalistic scenario to learn social skills.

This study illustrates that rehearsing social scenarios with visual prompts improves the frequency with which a child with autism performs social communication behaviours. It

Effects of Peer-Mediated Implementation of Visual Scripts in Middle School

may be beneficial for teachers and parents to rehearse using visual prompts with scripts to improve social communication skills with children with autism.

Further research is required to promote the generalisability of communication behaviours to untrained peers.

Future research should examine the effectiveness of using visual prompts with untrained peers and rehearsing scripted

scenarios in a range of different environments with children with autism.

FULL REFERENCE

Ganz, J., Heath, A., Lund, E., Camargo, S., Rispoli, M., Boles, M. and Plaisance, L. (2012). Effects of Peer-Mediated Implementation of Visual Scripts in Middle School. *Behavior Modification*, 36(3), p. 378-398.

CONCLUSION

The research detailed above supports the long-held view that children and young people with autism are assisted by visual information and that this is a critical practice within autism.

Visuals are demonstrated to be effective supports across a range of activities from life skills to academic skills and also in the provision of social and emotional supports for young people. The provision of visuals is progressing and traditional flashcard systems are increasingly being augmented and replaced by technology-based supports.

Visuals can be used across home, school and leisure activities and the research above indicates that they are not only useful

for initiating behaviours and transitioning but also to improve on-task performance and in preparation for undertaking new tasks. An additional notable implication for practice taken from the research summarised above is the role of peers and that with training the peers of children and young people with autism are a valuable support both inside and outside the classroom.

Practitioners and parents are encouraged to understand the value of visuals and to consider involving the peers and siblings of children and young people with autism as supports in the use of visual prompts and supports.

NOTES

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
Visual Strategies**





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