Communication Matters

AUGUST 2025 VOLUME 39 NUMBER 2

THE JOURNAL OF COMMUNICATION MATTERS / ISAAC (UK)

Enhancing Literacy – Self-Advocacy – Language Assessment – Rethinking Communication – Parents' Views – Organisational Change – Visual Interaction Analysis – Systemic Mindset – AAC and Aphasia – Aided Language – Hosting a Chat – Safeguarding – Empowered Communication

Communication Matters

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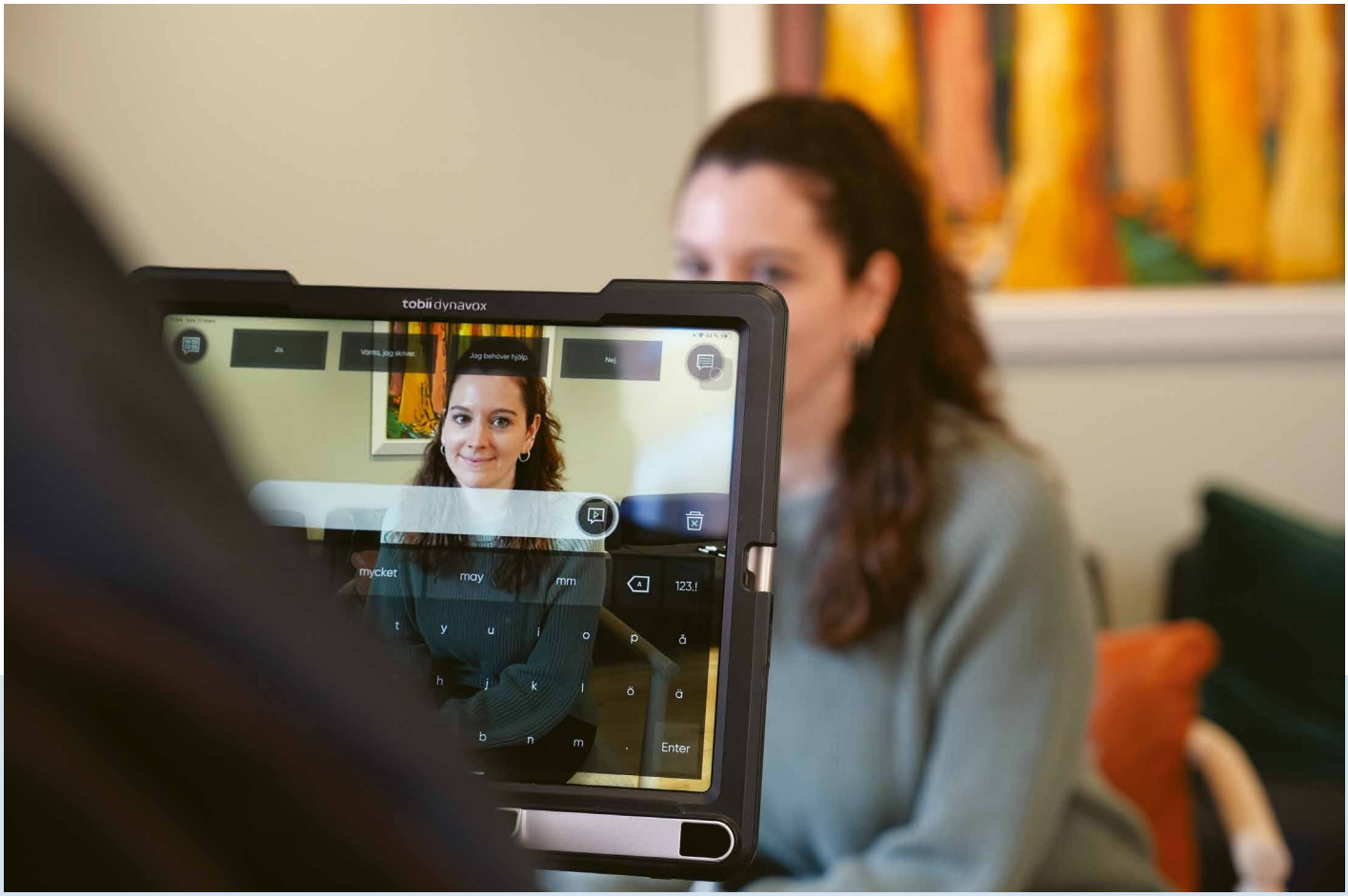
Communicate through AAC



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COMMUNICATION MATTERS JOURNAL
VOLUME 39 NUMBER 2
August 2025

Congratulations to CM member Becky Tyler for completing her Level 1 in Mentoring qualification. Becky posted "*I've officially completed Level 1 in Mentoring with Communication Matters! Proud to be building skills to support others who use AAC. Here's to growing, learning, and lifting each other up*." Find out more about our mentoring project at www.communicationmatters.org.uk/what-we-do/projects/mentoring-projects-2024.

COMMUNICATION MATTERS JOURNAL
ISSN 0969-9554

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Registered Charity No. 327500
Company Registered in England & Wales No. 01965474

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Advertising and Overseas Subscriptions
Tel: 0113 343 1533
Email: admin@communicationmatters.org.uk

Copy submission
Preferred text format: Microsoft Word
Preferred graphics/photo formats: JPEG, TIFF
Copy deadline: contact editor
The Communication Matters Journal is the official publication of Communication Matters / ISAAC (UK), and is an ISAAC affiliated publication.

Contents

Chair's Report

HELEN WHITTLE

As Chair of Communication Matters, I am asked to attend a few events each year and represent the CM membership. In one week, this year I was asked to attend two events that got me thinking about the current situation regarding the world of AAC in the UK.

One event was the 80th Anniversary of the Royal College of Speech and Language Therapists. It was a great celebration of my profession and a way of acknowledging the difference Speech and Language Therapists can make to the people they serve.

I also had the opportunity to represent Communication Matters at the 10th Anniversary of the Barnsley Assistive Technology service and hear from some truly inspirational clients of the service from over the years. Professor Pam Enderby spoke at both events. Pam has been a champion of equal pay in the speech and language therapy profession and a champion of the AAC field, working at one of the first NHS assessment centres in the UK.

[L-R] Helen Whittle (Chair of Communication Matters), Professor Pam Enderby (Emeritus Professor of Community Rehabilitation at University of Sheffield), and Dr Jo Sandiford (Senior Lecturer in Speech and Language Therapy at Leeds Beckett University) at the RCSLT 80th Anniversary event.

All this reflection got me thinking about how AAC and the wider Assistive Technology field have developed over the last 30 years.

We have come so far. In 1991, on my first day working at an assessment centre, I was asked to put together the computer we would be using in an assessment - it was a BBC computer with a wooden switch made by my colleague Roger Bates! In my second week, Roger put all the electronic communication aids available at the time in the UK on one table and told me to learn my way round them - there were 6! Communication books were produced by photocopying symbols from large dictionary books, cutting symbols out and sticking them into small folders. If they got lost, there was no option to print another copy out, you needed to start from scratch. Communication aids had paper overlays. And I remember going to the launch of the first communication aid with a screen and animated symbols, to much fanfare.

The field of AAC in the UK has developed over that time, in line with the developments of technology in wider society. Suppliers of equipment have expanded with increased staffing providing tailored training for AAC users. Many AAC users are now advising companies and shaping the AAC systems of the future. We have statutory funding for a defined group of AAC users, where there was no such funding previously. AAC users are more visible thanks to the profile of Rob Burrow and Lost Voice Guy. Social media has revolutionised the reach of individuals including those with disabilities and knowledge of AAC is now much wider in general society. Whilst not everything is perfect, we have come a long way.

As a small charity supporting those who use and support AAC in the UK, Communication Matters has developed too. AAC users are at the core of what we do and represent the Board and our membership across many of our events. Last year's Communication Matters Conference was the largest ever and with the largest number of AAC users in attendance. This year's Communication Matters Conference has the largest number of AAC users presenting papers ever.

In September, as I step down from being Chair of the Board for the last six turbulent but exciting years, I know the field of AAC in the UK will continue to be innovative and develop with AAC users at its heart. I also know that Communication Matters is in safe hands with a hardworking team of volunteer Trustees and small workforce. I look forward to seeing many of you at the conference.

Beyond Communication: Enhancing Language and Literacy in Education with Tailored AAC and Technology Solutions (Part 1)

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For purposes of brevity, we have described only one aspect of the work that we presented at CM2024 in this article; this is reflected in the reference to "Part 1" in the title of the article. We will submit a second article for consideration in the next edition of the Communication Matters Journal where we will present the other half of our CM2024 presentation.

Introduction

Dyslexia is challenging because it affects many aspects of communication and everyday life. This can make it more difficult to get by in a world where reading and writing are all around us. For Augmentative and Alternative Communication (AAC) users who use spelling as one of their communication strategies, dyslexia can have an even bigger impact.

This is the situation that Becky Tyler found herself in. Becky is an AAC user and has dyslexia. In this article, she explains how dyslexia affects how she uses her AAC system to communicate and in her studies. Kirsty McNaught, a Technology Consultant and Open-Source Developer, and Heather Graz, a PhD Candidate at the University of Dundee and a Speech and Language Therapist, then explain what they did when they teamed up with Becky to create a system to support communication when a word that she needs is not on her AAC device.

Becky's experience of dyslexia and communication

As an AAC user who also has dyslexia, I have experienced unique challenges with my communication as I need to be able to write down everything that I want to say. In school, my dyslexia was not recognised and my progress with literacy was very slow as I found phonics very hard to process. There was no recognition that an AAC user may also be dyslexic, and I received no support in school.

To give some context, I will describe how my dyslexia affects me personally. When it comes to reading, words jump around on the page. There is a shadow effect that makes it hard to focus and keeping my place while reading can also be a struggle. For writing, it is difficult for me to identify sounds, especially when they are in the middle of a word, and words are not always spelled the way they sound, which makes it harder for me to write them correctly.

Phonics has always been a particular struggle for me, especially because dyslexia complicates how I process sounds and spellings. So when it comes to speaking using my AAC device, dyslexia adds additional layers of difficulty. Real-time conversations can be tricky, especially when I need to spell out words that are not pre-programmed into my device. Spelling them letter by letter requires assistance from someone, like a personal assistant or family member, but since they cannot always guess what I am trying to say, this process can be slow and frustrating. Sometimes I need to give hints or describe the word which slows down the communication process and can be frustrating, especially in the middle of a conversation.

Another challenge occurs when my AAC pages have a lot of words without accompanying symbols as it becomes very difficult for me to quickly locate the word I need. The software shrinks longer words to fit them into the grid cell, making them even harder to spot. This is especially problematic because I rely on symbols to help me identify words quickly. Without symbols, I have to scan through a cluttered page of tiny text, which significantly slows down my ability to communicate and adds to my frustration. Constructing sentences on the fly is already a slow process, so if the word is hard to find or spell, it delays my response, and I might miss the chance to contribute to the conversation before it moves on.

When doing written work, I struggle to process the sounds of letters and match them to the correct spelling. This is particularly challenging in English, where many words are not spelled the way they sound. For example, words with silent letters or irregular spellings are especially tricky. Without a strong grasp of phonics, spelling becomes a guessing game, and I often get stuck trying to figure out the correct spelling. Being unable to distinguish and break down syllable sounds means I cannot break down a word into its component sounds which leads to errors and frustration. It feels like I am constantly battling against my own brain.

If I encounter a word I do not know how to spell, it can completely disrupt my writing process and derail my train of thought. So it is not just about spelling, but also about the overall flow of writing. Every time I get stuck, it is harder to keep the momentum going which can make writing feel like a never-ending challenge.

Two paths forward

These difficulties meant that we needed a plan to make sure that Becky always has quick and easy access to the vocabulary that she needs, using whatever resources she has available.

For most of her communication, Becky uses word-based selection in her AAC software (TD Snap), preferring to avoid spelling words out where possible. However, it can be a challenge to keep her AAC page sets current with the changing demands of her university studies, so sometimes she needs a word that is not available and she has to revert to typing with spelling suggestions.

For this reason, we designed this project to include two separate but related paths. On the one hand, we wanted to improve vocabulary management systems to ensure Becky has university-specific words available when she needs them. Separately to this, we also wanted to build upon the tools and skills that she has available to help her to use spelling where a word is not available.

As a result of space limitations, we will only be describing the system that we put in place to support Becky to spell with her AAC device in this article. We will present the system to manage Becky's vocabulary for university in more detail in a separate Communication Matters article.

Speeding up conversation with spelling

Spelling a word is a bit like making a cup of tea – a number of ingredients have to be combined, otherwise it is a drink but not necessarily a hot cup of tea. For spelling, these ingredients include knowing about the sounds (phonemes) and letters (graphemes) of the language, having the visual and listening skills to recognise and mentally manipulate these letters and sounds, and knowing grammar and word meanings in the language you are trying to write. Knowing the rules of phonics is useful to spell new or unfamiliar words. It also helps to be able to say the words that you are trying to write which means an extra challenge for individuals who are not able to produce speech. People with dyslexia can have difficulty with one or more of these skills. Importantly, each person has a unique combination of skills and challenges when it comes to spelling. To create a solution that was relevant to Becky specifically, we needed to make sure that we knew which of these skills were easy for her and which were more difficult.

First steps

We tested each aspect of spelling with Becky, then mapped out a plan together to help her to break syllables down into consonants and vowels, to match vowel sounds and their written letters, to hear and write two- and three-consonant sequences, and to identify vowels and consonants in the middle of words.

Our approach was for Becky to focus on the sounds that make up a word rather than the letters that are usually used to write the word when she needs to use spelling as a conversational tool. This means that she isn't limited to knowing the correct spelling for a word in order to sound out the word she wants to say, and allows us to separate out the auditory and phonemic skills from the sometimes illogical spelling rules of written English.

Creating a keyboard with voice output for phonics-based spelling

We used Becky's knowledge of basic phonics together with a phoneme keyboard that she already had on her AAC device (Figure 1) as our starting point. We soon realised that we needed to add some vowel sounds to this keyboard as not all English vowels were available. Becky also suggested that it would be quicker for her to use if the format of the phoneme keyboard was closer to a QWERTY keyboard layout.

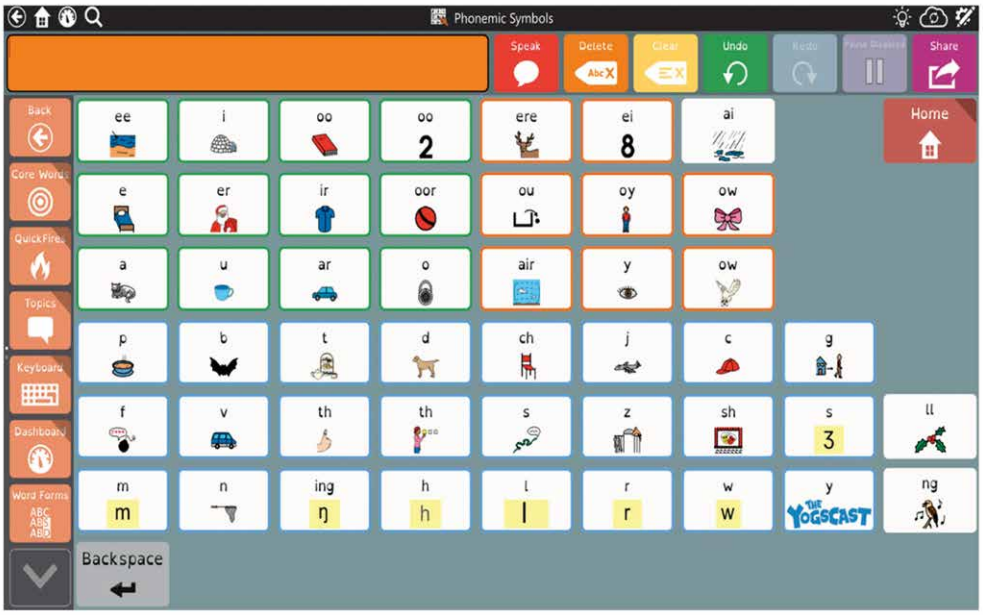

Figure 1 Becky's initial phoneme keyboard

We therefore created a new phonemic keyboard with a QWERTY layout (Figure 2). To do this we modified the open source Optikey Windows application to give it the capability of writing a word using phonemes from the International Phonetic Alphabet (IPA) and speaking it out with the Microsoft Speech Engine. Within the application we have designed a QWERTY-based layout which gives Becky access to all vowels and consonants that she needs to form English words.

We grouped vowels into short single vowels, long single vowels and vowel combinations (diphthongs) using colour-coding on this modified keyboard. Speech sounds that were not already on a QWERTY keyboard were placed near existing letters that looked or sounded similar. We included symbols and pictures where necessary on keys to make it easier for Becky to know which vowel key to choose when spelling a word.

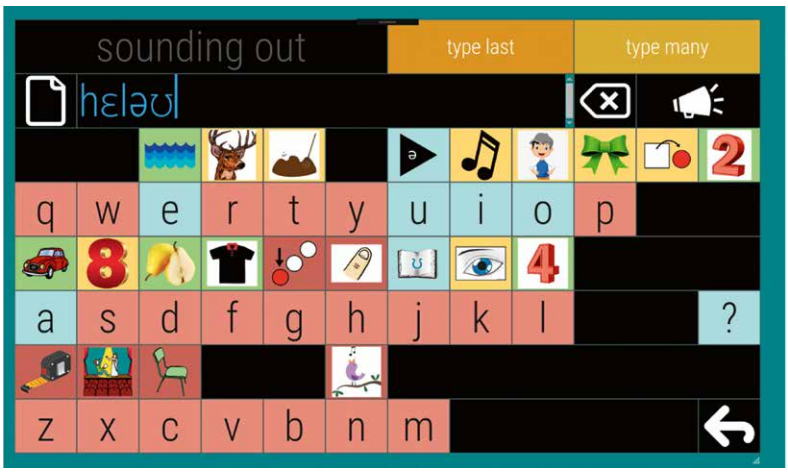

Figure 2 The modified phonemic keyboard

This modified keyboard lets Becky sound out potential phonemes before selecting each sound, or to immediately type using IPA symbols to create a whole word. The app can speak out as she adds phonemes, or at the end when the whole word is blended. Becky uses eye gaze as an access method, but this keyboard could also support touch input direct access.

A spelling programme

We used this keyboard both as a teaching tool and a practice tool with a spelling programme constructed specifically for Becky. Spelling patterns using single short and long vowels were presented first. More difficult vowel and consonant combinations were presented later. Spelling patterns that reflected language rules were taught separately, as were individual, irregularly spelled words that Becky needed for class discussions.

We generated a variety of different practice materials that reflected Becky's interests. These included online materials, apps and quizzes. For example, at one point this included multiple choice questions to identify which vowel sounds were present in a given word. Becky can also try to sound out a whole word using IPA, with the software giving her feedback on which sounds were correct/almost correct/absent, as shown in Figure 3.

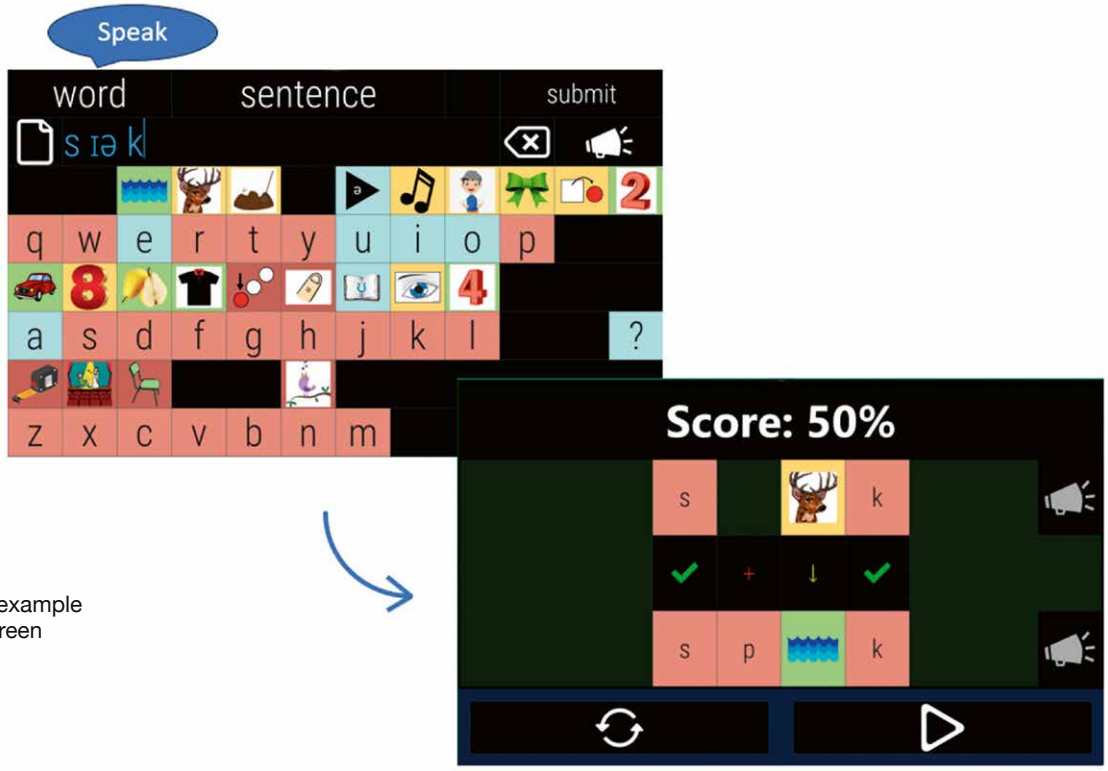

Figure 3 An example feedback screen

Becky uses the phonemic keyboard in her everyday conversations for real-world practice. She sometimes uses it to type IPA directly into conversations with ChatGPT to get assistance identifying a word that is difficult to spell.

Ongoing keyboard development

We are continuing to develop this keyboard to support Becky's practice and give her a tool to use in everyday communication. We will be adding functionality to convert from IPA symbols to the closest matching English words, so that Becky can use her phonics skills to get to the final goal of written words, even in the middle of a writing task. We would like to see similar functionality added to other AAC apps to support individuals in exploring and communicating the sounds that make up the English language, before they can confidently tackle the complexities of English spelling rules.

This would make it even easier for people with dyslexia to use and those who are learning to spell.

The software is shared on GitHub with a GPL3 licence [1].

The verdict

The final verdict about whether this phonemic keyboard is useful lies with Becky:

"My new phonemic keyboard has already enabled me to improve my spelling and given me access to words that are missing from my AAC pages. The speed of my communications is also improving as I spend less time trying to find or spell words. This has given me an increased confidence and much less frustration when I am speaking and writing. It has also given me access to a much wider vocabulary of words. But best of all, I am looking forward to finally not needing to do any more spelling tests!!"

References

1 https://github.com/kmcnaught/OptikeyIPA

The authors declare that there is no commercial interest associated with this article.

Self-Advocacy

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Speaking up for ourselves so we can achieve what we want in life is a skill everyone needs to learn, not just those of us with disabilities. At its simplest level, self-advocacy is being able to communicate our needs, but we all know it isn't always as easy as it sounds. Sometimes the way forward is getting support from another person to help us express our views and wishes and help us stand up for our rights. When we do this, we are using an advocate.

Speaking out as an advocate on behalf of others can be equally challenging. For instance, I've addressed the United Nations committee for people with disabilities twice. Speakers have just 3 minutes, adjusted for an AAC user to 6 minutes. Imagine how carefully you need to craft your statement to advocate on how communication rights can be rolled out globally. The messaging on behalf of others has to be clear, easy to follow and grounded in research.

Everything here is based on my lived experiences, so you might have different ways you've addressed some of the same challenges.

For many people, self-advocacy isn't something that just happens. It is a skill that develops through childhood, into teens and then continues in adulthood. At the core of advocating for ourselves is communication, however, being able to communicate is only a part of the picture. We also need to develop the confidence to do this.

Let me share a story that illustrates this. When I was 15, my Mum could no longer get me in and out of the bath safely. Plus, I wanted more independence. The Occupational Therapist was determined I was having a wet room; that was the local policy. She didn't listen to me, my Mum, or my Paediatrician on why I needed a bath. I was incensed. I knew I had the right to be heard. Trying to state my case verbally, with my communication aid, clearly wasn't working. So, I hand wrote a letter, which if you have seen my handwriting, you would know was a labour of love. I said I didn't believe I was being listened to. I gave the reasons why a shower was unsuitable for me. I stated the health and well-being benefits of a bath, including being able to have a greater level of independence. I sent the letter, then sat back. The result was I got heard, and I got the bath I needed.

I learned so much from this early success. I still use the same steps to achieve what I want today. My 5 steps are: be authentic, know your rights, demonstrate self-determination, communicate effectively. Then, be willing to learn by being reflective after each opportunity to self-advocate.

Step 1: Being authentic

To be ourselves, we need to be self-aware. It is about knowing who we are. Being authentic means being yourself, being real, or true to yourself, which you might think sounds simple. This means having self-knowledge and understanding our personal identity. One of the things to understand is what we want for ourselves is not always what others might think we want. People often judge other people and make their minds up very quickly about what they think they see. The focus for this step is to think about who and what we are as individuals, not what others tell us we are. This is not what others tell us we should do, or be, or have, or want. This is about our wishes and dreams, our views, our thoughts, and our feelings. Until we know ourselves and understand what we want then it is impossible to share this with others. I recommend starting by writing a list of what you think are your strengths and weaknesses, then another list of what you like and don't like. Then, allow yourself to dream, really think about what matters to you.

Step 2: Knowing our rights and doing our research

Next, when we know our rights, this helps us manage our expectations of others, and ourselves. Here we could talk about what the United Nations Convention of Rights of People with Disabilities says. We could focus on policy like the Care Act. But I'm simply going to say these are underpinned by hearing our voices. It still doesn't always happen, but I am fully behind the sentiment that is often called, "nothing about me, without me". What this means is that we all have the right to be included in any, and every discussion, and decision, about us, and our lives. Like everyone else we deserve choices, and our voices need to be heard. Whether this is a small thing, or a massive life changing event, we should expect that no one will be making any decision for us, either without our consent or active involvement in the process. This builds on knowing ourselves and being authentic about what we want, finding out about your rights, and deciding what you want to achieve. When we know what to expect of others, that frames what we can expect for ourselves. Let there be nothing about us without us!

Step 3: Being self-determined

If we want to make thing happen, we need to plan. Being self-determined builds on knowing yourself and knowing your rights. This step is about decision making. From a young age, it was already clear to me that whilst I wanted to live independently, I would always need help around the clock. I knew what I wanted, but I was realistic that there were some things I wouldn't be able to do myself. Frankly doing household chores are physically beyond me, but I know what standards I expect, and I can direct a personal assistant to do what I need.

Being able to make your own choices and decisions is important. When I arrived at university, I felt thrown in the deep end. Not only was I living completely independently for the first time, in a new town, studying in a new place with new academic support. Then, I was also juggling managing a full 24/7 support team. I was determined to make it all work. But all of this together was quite overwhelming at times. I was also exhausted with the new challenges of my life. There was no-one from school saying lights out, and no mum making sure my meals were on the table. Even if I awoke in the night, I had to tell people what I needed them to do. Training and managing a team of people was a whole different ball game to anything I had previously experienced. I'd recommend if you are looking at moving to a new setting, or entering a new stage in life, then start to practise on the small decisions long before you need to do it in reality. Moving somewhere new means managing change, being resilient and determined if things don't always go quite how you expect, especially when leading a team.

The good news is every disabled person I know has already developed some of these skills through experience. Because of our disabilities we constantly seek solutions to everyday things other people find easy. It means we are used to asking ourselves questions, to dealing with change and being creative in our problem solving. Don't doubt your ability, you already have a head start in self-determination, just try to be yourself and believe you can do it. At 12 when my mainstream school said I couldn't do sport, and I was unlikely to ever get any qualifications, I didn't give up. Try and know what you want, and why. I've found that by having a positive mind set you can turn things that appear at first to be impossible into possibilities.

Step 4: Communication

Being able to communicate with others is like a golden thread that underpins everything when it comes to advocacy. Yet this is often the hardest thing of all when we use AAC. We know what we want from life, we know our rights, we are determined to make things happen, but how? I have approached self-advocacy in many different ways. It is important to find the right tool for the right situation, with the right person. I've written personal letters, crafted emails, and delivered presentations. I've tackled big issues head on, and I've used intermediaries like the paediatrician to add weight to get appropriate action. When I was playing boccia with Great Britain, I used my blog to address issues I wanted to resolve or when I wanted to share my point of view. I chose this as a medium because I knew the staff support team read what I wrote. One example was a post about how it is sometimes easier to say yes, when you really want to say no. The result was the performance director sought me out. She told me she had read my blog, and if there was ever a time when I felt I wanted to say no, but felt I couldn't, then I must go and see her. That one event gave me the confidence to speak out more and stand my ground.

Something else I've done ever since I was little is practise new situations, what I might say, and what I might ask. This is a bit like being an athlete, where you practise the same skill repeatedly until you can execute it without thinking. For every new situation familiarisation helps, and over time I've found having this opportunity means I can anticipate questions and responses that might come up. In turn this gives me greater confidence when it matters. Over time there have been fewer new situations, but the result is now that I have some standard programming on my device. This helps me when there is someone I've not met before.

Step 5: Reflection

I've practised reflection most of my life, because my mum encouraged me from an early age to ask myself 3 questions. They were also questions that became part of my life as an elite athlete and really helped me to review my performance in the moment. These 3 questions are: What went well? What might be improved? Then, is there anything I would change about what happened?

We can learn a lot about ourselves and others when we spend time, even briefly, thinking about situations and events. As an example, thinking of a conversation:

- 'What went well' might be that I had done my research, I had planned well what I wanted to say. I made my points, and the person I was talking to listened, and then acted.
- 'What might be improved' could be a range of things, from not having anticipated the questions that might be raised. Through to there might have been a better time to raise my concerns.
- 'Anything I would change about what happened' again can be quite varied. It might be considering if I could have said something in a better way, perhaps more diplomatically. Or, that I might have had more confidence if I had role played the situation with a trusted staff member before the meeting.

Being reflective is about being open minded and willing to learn. Not being critical of yourself but realistic about what went well. Being determined and resilient. Considering what might be improved and what you might change. The upshot of this is an action list of things to consider when advocating successfully for yourself and others next time.

Where next?

My recommendation for self-advocacy is to start early and start small, work first on being authentic. As you go, think about the vocabulary you need and add it to you AAC resources. Practise using these whenever you can and remember the more we know about who we are and what we want the more confident we will be about speaking out in everyday life. Take things step by step. Good luck.

3-D Animation in Interactive On-Screen Language Assessment for People with Learning and Physical Disabilities who Need AAC

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Introduction

Assessment of communication for someone with learning and physical disabilities is required to guide the selection of appropriate augmentative and alternative communication (AAC) technology. Physical interaction with real objects would normally be required during language assessment so that a client could demonstrate to a clinician an understanding of verbal instructions through touching or manipulating objects. A client with physical disabilities could find this difficult to do, however, making the assessment process challenging for the clinician (speech and language therapist). Previous investigation used an accessible interactive computer-based simulation of the assessment process, with on-screen images of objects replacing the real objects for clients to interact with. This showed positive outcomes. Two-dimensional (2-D) imagery was used throughout that work, while three-dimensional (3-D) imagery with animation was identified as a promising area for further exploration. This further exploration is described here.

3-D Images and AAC

The previous (2-D) work on interactive on-screen language assessment (Simpson *et al.*, 2024) was motivated by difficulties with real objects making language assessment difficult (Chadwick *et al.,* (2019), Moseley *et al.,* (2021)). While 2-D images were effective in the role, 3-D images give more scope for someone to explore physical attributes of an object (e.g., interior/exterior, depth, rotation) which cannot all be shown on a 2-D image. Animation may reveal further attributes. 3-D representation and animation were therefore considered interesting for this application.

Skills of spatial perception and spatial visualisation are needed for processing 3-D symbols, also mental rotation which develops from an early age (Frick A. *et al.,* 2023). 3-D visualisation-based training was seen to improve mental rotation ability; viewing models from multiple angles was particularly beneficial (Piri & Gagiltay, 2024). Guedes *et al.* (2023) used an augmented reality (AR) system, co-designed with people with learning disabilities, to enable them to access a museum and engage with artefacts; the people with learning disabilities liked the 3-D images.

Animation can be used in AAC, usually to give feedback to the user and to a lesser extent to improve transparency of images or symbols (Frick B. *et al.,* 2023). Fujisawa *et al.* (2011) found that learning was enhanced when animation was employed to facilitate comprehension of symbols in young students with intellectual disabilities; performance on an AAC system improved with use of animated symbols.

Studies thus indicated that people with physical disabilities and/or learning disabilities could interact successfully with 3-D images and benefit from their use, including animation. This encouraged the proposed investigation.

Language Assessment System with 3-D Interface

The previous assessment system (Simpson *et al.,* 2024) was designed for adults with learning disabilities, communication difficulties and some physical difficulties which require them to use alternative forms of access. It was based on the Derbyshire Language Scheme (DLS). Its display had an empty 'tabletop' canvas upon which test items (e.g., spoon, ball, cup) could be placed. These items could be dragged and dropped onto the tabletop by a speech and language therapist (SLT) to simulate placing real objects in front of a client, who would then be asked to do things with them, e.g. 'Show me the spoon'.

The new (3-D) system was also developed as a DLS-based assessment for the same user group, with:

- **three-dimensional representation** of people and objects, with movement and animation, on an interactive display,
- a range of access methods/devices (e.g., mouse, touch screen, joystick, switches),
- client instructions displayed on-screen including optional audio (speech) delivery,
- options to change font, font size and colour scheme on the display via a Settings page.

The display depicted a flat surface, like a tabletop, receding from the viewer towards a horizon line. 3-D images of objects and people could be displayed on this surface for a client to select and interact with (Figure 1). The area of display below the tabletop surface showed a flat grey panel on which touch-screen control buttons could be displayed for a client to access (Figure 2). Other access devices (e.g., mouse, joystick, switches) could be used, making the 3-D system accessible for clients with physical disabilities who would not be able to interact with the real physical objects usually used in an assessment. The grey panel would also display instructions from the SLT to the client, augmented optionally by stored speech delivery. Figure 1 shows the tabletop surface with three items (cup, spoon, and drinks can), the grey panel with the SLT's instruction ('Show me the Cup') and a Confirm button. The client would click on the cup to select it for the SLT, then click 'Confirm' followed by a further 'Yes' button to finalise the selection. The other two objects on the surface (spoon, can) could be selected in the same way. Objects could also be moved around the surface as requested by the SLT.

Figure 1 An example screen with the 'tabletop' surface holding three items (cup, drinks can, spoon). The grey panel below the tabletop shows the SLT's instruction to the client ('Show me the Cup') and a Confirm button. The client could click on the cup to select it for the SLT then click Confirm. The other two objects could be similarly selected in response to SLT requests.

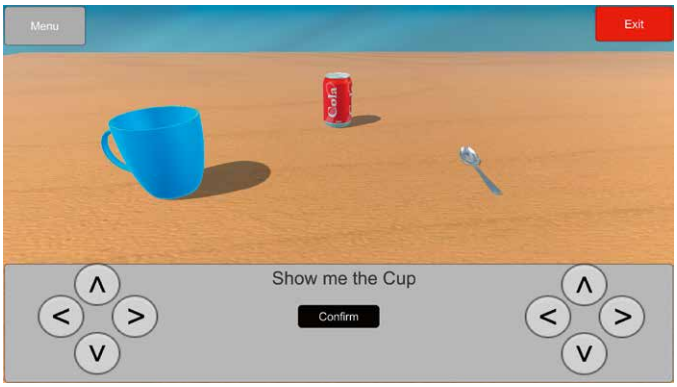

Figure 2 The 'Show Me' screen with eight touch-screen control buttons included on the grey panel. These buttons allow cursor control on a touch screen device for selecting, moving and rotating objects in response to SLT requests.

The requirement for animation inspired the creation of dynamic figures which could be seen performing actions such as walking, running, jumping and dancing (Figure 3), so that a client could be assessed on their understanding of the actions being performed. Each figure animated a different action on the display, giving a clear representation of the action they were performing, while helping also to promote client engagement with the assessment.

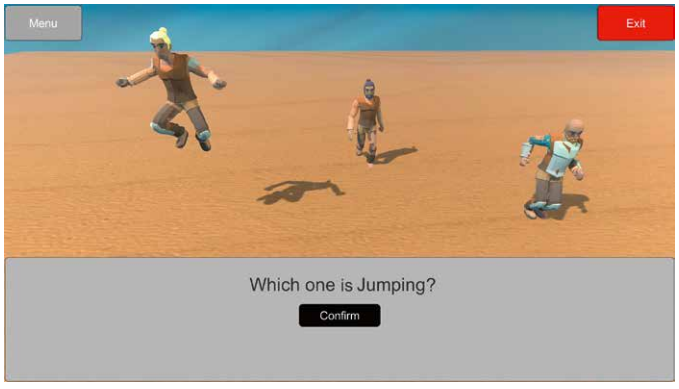

Figure 3 Animated action figures can be shown. The three figures here are jumping, running, and dancing. (Other actions are walking, standing, and hammering.) The figures are all moving and are shown in mid-action, e.g. mid-jump. The client is being asked, via the caption, to identify the jumping figure.

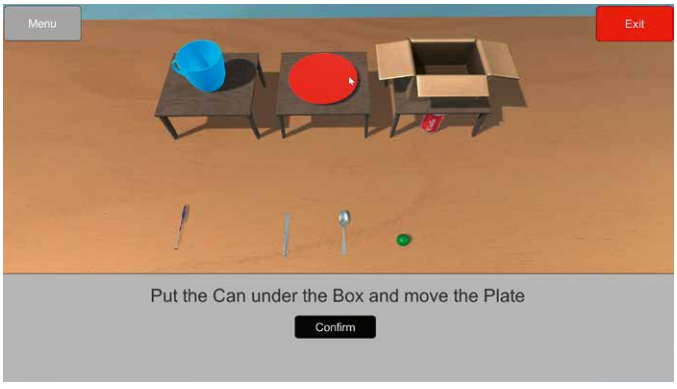

Figure 4 Objects rest on small platforms so that other objects can be moved underneath them, giving a basis for assessing a client's understanding of the preposition 'under'. The SLT would ask the client to move an object (e.g. pen, can, knife, spoon, ball) under one of the platform objects. The can has hence been moved under the box. The client has also selected the plate for movement (indicated by the plate changing colour to red).

Figure 4 shows an approach to assessing understanding of the preposition 'under'. Small platforms are shown sitting on the surface, with an object positioned on each platform, so there is space for other objects to be moved underneath them. An SLT could therefore

ask a client to move one object under another as an assessment task, so giving the client opportunity to demonstrate understanding of the word 'under' and how objects can be moved and placed relative to each other. Other examples of instructions in this vein are 'Put the can under the box and move the plate', and 'Put the pen in the box and the knife under the cup'. It can also be seen here how more complex instructions can be composed.

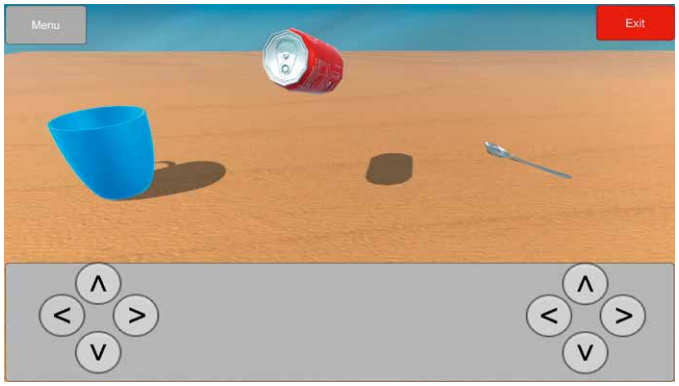

Figure 5 Objects could be rotated individually on the tabletop surface to reveal their reverse side. They could also be raised above the surface and rotated about any axis to allow viewing from any angle, facilitating close examination.

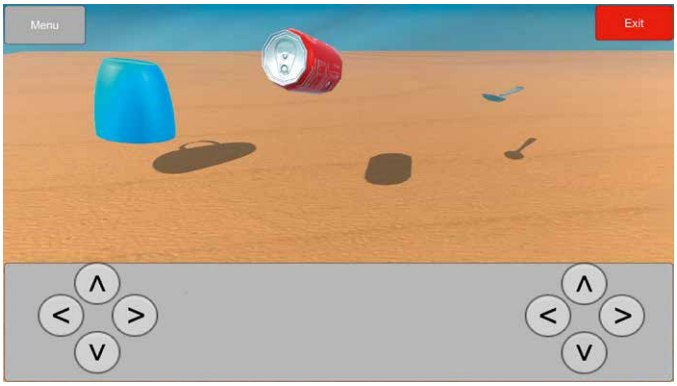

Figure 6 All the objects could be raised above the surface and left hanging there. Rotation about all axes allowed complete inspection of object exteriors and the interiors of containers such as cups.

Objects could be rotated on the tabletop surface and viewed from all sides. They could also be lifted above the surface, rotated about any axis and suspended there for viewing and examination (Figures 5, 6). The interiors of containers such as cups, bowls and open boxes could thus be seen, allowing clients to inspect them and respond to SLT questions about them. The animated action figures (Figure 3) could also be rotated and levitated in this manner and examined from all angles. The visual effect of rotating and tumbling objects and action figures was engaging, affording viewers an enjoyable and entertaining experience. It thus had good motivational potential for clients.

Appraisal of System by Speech & Language Therapists

The system was appraised by six SLTs experienced in the language assessment of communication impaired people. Comments gathered contained suggestions for: using audio cues when objects are selected or dropped onto a surface; a facility for changing the colours of font and background; and limiting the cognitive load of using different access methods. Further SLT feedback warned against the complexity of 'Move to' instructions and the difficulty for users of click-and-drag actions (click-and-point being preferred), while a Confirm button on all tests would give users control over their rate of progress through an assessment.

All SLTs commented that a language assessment using 3-D models would be valuable and indicated in a usability questionnaire that the system was usable. In a task workload questionnaire, workload was rated as relatively good, with mental demand being judged the most challenging aspect. This accorded with feedback comments relating to access methods and the complexity of 'Move to' instructions. Adjustments were made to the system at this stage in response to the SLT feedback. The system performed effectively overall and addressed the original requirement from the SLT perspective.

Trial of System with Clients

A trial was conducted with five potential users with learning disabilities. After a demonstration of the system and instruction in its use, they were invited to explore its features in their own time using the access method that they preferred (a 23-inch touch screen, a rollerball, or a joystick). They were then given assessment instructions to carry out (e.g., 'Show me the cup', 'Put the can under the box and move the plate') using the on-screen symbols and objects on display, after which they were encouraged to explore further the 3-D virtual objects on the system. Users' views on the system were recorded using a Talking Mat®. The users were able to carry out simple instructions successfully, while some difficulties emerged when more complex instructions were deployed. This may indicate that the system was forming an effective basis for language assessment. Understanding the difference between prepositions such as "under" and "in" caused slight problems for a few of the users.

The Talking Mats® investigation showed that the users felt positive about their experience of using the system: 92.5% of responses to questions were positive, 7.5% were unsure and none were negative. One user felt unsure about putting an object under another, which may reflect a difficulty with prepositions, while another user felt unsure about moving and rotating objects on the screen. Overall, however, this was an encouraging outcome; the results gathered indicate a positive experience for the users.

Conclusions

A prototype interactive on-screen language assessment system using 3-D imagery and animation was developed for exploring potential use by clinicians and people with learning and physical disabilities and communication difficulties. The system was evaluated positively by clinicians (SLTs) and potential clients. The 3-D imagery and animation expand possibilities for on-screen language assessment for this user population.

Further investigation: Evaluation of the system with more clients with a wider range of language levels would be valuable, as would investigation of more access methods (e.g., eye gaze, gesture detection) for the system. The use of 3-D imagery to improve transparency and user understanding of symbols could be investigated, as could the use of symbols and animation in the AAC user interface. Manipulation of objects/figures on the display might serve as a conversation medium for some AAC users who have difficulty in expression or understanding, with some features of conversational structure (Arnott & Alm, 2013) possibly incorporated. The system could also be augmented with speech feedback to assist the user in response to user actions.

The work reported here has given an instructive exploration of 3-D imagery and animation in interactive on-screen language assessment and indicated some promising opportunities for further investigation.

Acknowledgements

The authors gratefully acknowledge the contributions of all participants in the conduct of this work.

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Rethinking Communication: Considering AAC for Speaking Autistic Individuals

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At the current time, there are many ongoing discussions which promote diversity, the need for inclusion, freedom including freedom of choice for individuals with disabilities. These discussions, however, are primarily influenced by ableist ideas. This contrasts with practices both in the past, and which to a certain extent continue today, which still view verbal speech as the 'gold standard' of communication, thereby not fully acknowledging that AAC could be a choice for some which also supports the goal of communication (Gomez-Victoria & Pava-Ripoll, 2021). If, therefore, society is moving towards greater acceptance of diversity, could AAC be recognised as being at the same level as speech?

On the podcast *ASHA Voices*, speech and language therapist Amy Donaldson (2023), explains how society and professionals like her are focused on the development of verbal speech. She later states that she had no idea that there are people with verbal language abilities whose speech is insufficient for meeting all their communicative needs. Very often, therefore, professionals are focused on developing and perfecting speech but may overlook that an individual does not have a means of communication whilst continuing to target speech as the focus of their interventions. As a result, AAC is often viewed as a last resort because verbal speech does not emerge or because it is not easily understood by others. This runs counter to research that demonstrates that children who use AAC tend to develop more speech than those who receive speech therapy only (Wayman et al., 2017). Furthermore, there are a group of autistic individuals who may have the ability to speak but still may prefer to use AAC in some situations.

In this article, we therefore explore the consideration of AAC for speaking autistic individuals.

My client speaks, should I consider AAC?

"Current views of AAC limit access for those who are seen as too capable or not capable enough" (Wayman et al., 2017, p. 1). Historically, AAC was perceived as an option primarily for non-verbal and minimally verbal autistic individuals, and for those who have unintelligible speech. However, there is limited research on the consideration of AAC for speaking autistic individuals. Some speaking autistic individuals have, however, said that AAC was given as an option in adulthood or had to be explored by themselves e.g. Donaldson et al., 2021. For these individuals, a candidacy model was applied to the provision of AAC services by setting standards which an individual has to meet for AAC to be considered as a means of supporting communication.

The issue of whether AAC should be considered could be linked to the terms often used by professionals. Very often, a person's communication abilities are labelled as being either verbal or nonverbal (Koerner et al., 2023). In contrast, Sparrow (2017), an autistic blogger highlighted that verbal speech is a continuum and cannot be easily labelled. As a result, this 'label' can have negative implications for the individual and could therefore result in an individual not being 'eligible' for AAC consideration.

Existing AAC definitions

ASHA (2021) describes AAC as forms of communication that do not rely on verbal speech, providing options for individuals with speech or language difficulties. However, this definition does not really describe people who can speak but whose speech does not meet all their needs. According to the Communication Matters definition, AAC encompasses a wide variety of methods that aid or substitute verbal speech. Zisk and Dalton (2019) add that AAC can provide individuals who are unable to speak constantly with the opportunity to communicate, thereby broadening the definition even further than ASHA.

One question to think about is whether we as professionals are meeting this definition or whether are we limiting our consideration of AAC to those who are minimally verbal or non-verbal. While it is acknowledged that services may have constraints that are outside their control such as eligibility criteria, autistic individuals who require AAC to communicate everywhere in whatever situation they want to may not always be considered for AAC by professionals thus a candidacy model is being applied.

What do we know about AAC for autistic individuals?

Limited research is available on how speaking autistic individuals could benefit from AAC and this may explain why these individuals have encountered difficulties accessing it. Recently, some autistic individuals have voiced their experiences in order to get their message across of how AAC has benefited them.

What does experience tell us?

In Malta, AAC has always been considered for individuals with complex communication needs. This is because the National Assistive Technology Team which deals with AAC assessments has broad referral criteria which include the possibility of referrals of autistic individuals who have speaking abilities. Referrals come from professionals who request support to make decisions about AAC as they lack relevant research to refer to.

However, for professionals to become more confident in considering AAC for speaking individuals and for teams to make changes to their referrals and acceptance criteria, academic research is necessary to demonstrate that AAC can yield positive outcomes to speaking autistic individuals. Without this evidence, professionals may find it difficult to consider AAC for speaking autistic individuals. They may not know what to assess and what kind of AAC to consider. In fact, many professionals have reported that they have limited experience with AAC and a lack of confidence in using it, both for assessments and intervention due to limited training in university programs (Koerner et al, 2023).

So, should we consider AAC?

According to Donaldson et al. (2021), professionals should not assume that speaking autistic individuals do not require AAC support. Many speaking autistic AAC users have shared that before exploring AAC, they avoided speaking, for example endever* used to text people nearby rather than speaking to them (ASHA Voices, 2023). Hartmann and Sheldon (2019) found that only a few people receive the AAC support that research suggests they need. This issue was also addressed by Robinson (2024) in a keynote speech at the recent Communication Matters conference, where it was noted that current assessment criteria may prevent autistic individuals from accessing AAC services. Donaldson et al. (2023) recommend that all autistic children should be considered for AAC, regardless of their verbal abilities. Hence, pushing the idea that AAC should be encouraged for anyone and everyone. Due to limited guidance and frustration, some autistic advocates explored AAC independently and are now sharing their thoughts via social media, research, and conferences.

Utilising evidence-based practice as a framework to how we approach AAC requires taking into account the AAC user's experience as a necessary step to take the field of AAC forward for speaking autistic adults. The 17 Sustainable Development Goals by the United Nations (2015) aim to promote inclusion and address inequality. Hence, if as professionals we are overlooking what these individuals are saying, are we in turn affecting co production and co creation which are the aims of the United Nations 17 Sustainable Development Goals?

Additionally, autistic advocates are saying that it should be part of childhood so people can choose how they want to communicate. This is because we believe that communication is for everyone. This is a mind shift which reflects AAC as a part of everyday life; an offer for everyone to use. Speech is not the only communicative method, therefore, let's provide access from an early age to all kinds of communication including AAC.

One thing for certain is that all forms of communication should be accepted equally and that we need to move away from considering speech as the ideal standard for how we communicate together. Alongside the self-perception of speaking autistic individuals, a call for research is being made to further explore AAC as an option for speaking autistic individuals.

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Parents' Views on Speech and Language Therapy Provision for Non-verbal/non-speaking Children With Neurodisability

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Background

I am leading a research project to develop a parent-reported measure of communication outcomes for non-verbal/non-speaking children. One of the recommendations when developing this type of measure is to obtain the views of parents as experts (Matza et al., 2013)this task force report identifies factors to consider when making decisions about the design and use of pediatric PRO instruments, while highlighting issues that require further research. Good Research Practices Five good research practices are discussed: 1. I completed a literature synthesis providing qualitative data on parents' perspectives (Buckeridge et al., 2024) and also wanted to talk to parents directly. When parents discussed the outcomes they wanted their child to achieve, most reflected on what they felt had influenced their child's communication development. Whilst not all the interview data will inform the outcome measure, there were valuable first-hand insights from parents on speech and language therapy provision that may be of interest to speech and language therapists (SLTs), service managers and commissioners.

Method

I invited parents of children age 4 to 18 years with neurodisability (Morris et al., 2013) described as non-verbal (using no or few consistent verbal words) (Koegel et al., 2020) to take part in online individual semi structured interviews. I recruited parents via social media channels, parent carer forums, special schools and charities. The study received ethical approval from the University of Kent. Twenty-six parents across the UK participated in the interviews. Their children's main diagnostic categories were: autism spectrum disorder (ASD) 11, genetic disorder 10, cerebral palsy (CP) 4, epilepsy 1. Most children had co-occurring conditions. Data analysis was undertaken in NVivo software using a mix of inductive (grounded in the data) and deductive (based on the interview schedule) coding (Richie and Lewis, 2008).

Findings

The focus of this article is one of the sub-themes, *speech and language therapy provision,* from a theme which explored influences on a child's communication development. The sub-theme has been divided into the three concepts shown in the table below:

Table of concepts and key issues for speech and language therapy provision

Concept	Key issues
1. Listening to parental concerns	Initial concerns about child's development Developing a rapport with an SLT Liaison with a consistent SLT
2. The desire for specialist provision	Regular speech and language therapy Intervention from an SLT with expertise in AAC Face to face intervention
3. Parental involvement in speech and language therapy	Parent participation in intervention Training for parents on communication strategies Therapy in the home environment

1. Listening to parental concerns

This concept includes parents' perspectives on the importance of a professional listening to their initial concerns and then developing a collaborative relationship with an SLT. Parents often noticed that there was a problem with their child's speech and language development from a young age but some had difficulty in getting professionals to take their concerns seriously:

> *'Considering she obviously doesn't speak, I took her to the speech language therapist (at 15 months)…and I was told no, it'll be fine. It'll come, not a problem, don't worry about it type thing, you know, she's still very young' (parent of a child with a genetic condition)*

One parent stated that her son, who has epilepsy, was four years old and not speaking. Although she had received one on-line appointment and been sent some videos, her child had not had a face-to-face appointment with an SLT.

> *'I keep telling them my concern with the language thing, you know. I want to tell them (the nursery) if they can actually maybe try and see how they can communicate with speech and language therapist'*

Conversely, this parent of an autistic child reported feeling well supported when her child first saw an SLT:

> *'I was saying look something is not right. He was very young and I'd read online that he should have 50 words by that point… and it was the first professional that actually took me seriously and agreed and made the necessary referrals'*

It was then important for parents to develop a good rapport with an SLT who they felt at ease discussing their concerns with:

> *It's hard work anyway without having to feel like you're in conflict with someone who should be supporting you. And that's not our experience with our child's SLT person at the minute… but the person before that…it definitely was' (parent of a child with CP)*

A change to the SLT working with a child was reported to be a frequent occurrence and affected the parent-professional collaboration. Parents found it frustrating to explain their child's development all over again. When a parent saw the same therapist regularly, they appreciated the opportunity this gave for their concerns to be heard:

> *'I had her for probably three or four appointments and she used to come regularly…I built up a really good relationship with her, which was nice because I could chat to her and I think that's really important … somebody that the parent can open up to and air their concerns' (parent of an autistic child)*

2. The desire for specialist provision

This concept includes views about the importance of input from an SLT with experience of non-verbal/non-speaking children who has expertise in Augmentative and Alternative communication (AAC). Parents spoke about the importance of receiving regular input from an SLT who understood the nature of their child's communication difficulty. Some parents felt that SLTs who were not specialists were either not interested in working with their child or did not know what they should be doing with them, for example:

> *'So I think that a lot of people give up on children that don't talk like our original SLT gave up. And that shouldn't be the case' (parent of a child with a genetic disorder)*

Most parents felt that the speech and language therapy should be provided by an SLT who has experience of working with this population of children but depending on which part of the country they lived, specialists were not always available:

> *'I think it could be improved if they had a specialist SLT who had experience with children who cannot speak or won't speak rather than fits all for every child, no matter what's going on with them' (parent of an autistic child)*

Parents valued regular face to face input for their child with a therapist who has specialist skills in alternative and augmentative communication (AAC). Some parents had access to SLTs who were knowledgeable about AAC but others said they had to carry out much of the research themselves. In certain geographical areas, there were problems sourcing a specialist AAC service for technology. Many parents said they had funded a device or training themselves.

3. Parental involvement in speech and language therapy

This concept encompasses parents' views about the need for them to be involved in speech and language therapy interventions, whether delivered directly or indirectly. This parent of a child with CP explained the predicament for an SLT who was tasked with training others how to communicate with her child:

> *'The SLT is very happy to come and do training and stuff and I probably will access that at some point in the future, but again, you know she makes the point she doesn't know her in the same way that I do so you know it's a bit tricky for her to do that training unless she's just doing a kind of general training about intensive interaction or total communication'*

Several parents spoke about their desire to receive training themselves to implement communication strategies with their child because the activities undertaken in speech and language therapy could be difficult to grasp:

> *'Of all the therapies that she has, I find speech and language is the most difficult and because it's so complex, you know, physio you can show them what they have to do and then they can try and copy you. But with speech and language, it's a much more difficult one' (parent of a child with CP)*

Some parents spoke how much their child's speech and language therapy provision had been impacted by the Covid-19 pandemic or having to educate them at home due to ill health. There was some support reported from SLTs via use of technology but parents did not find this as helpful as face-to-face sessions:

> *'I keep explaining to people I am not trained to do this. I should not be left to my own devices for the last three and a half years to work with it ...if they didn't have resources to actually send someone in, I should have been guided' (parent of a child with a genetic disorder)*

Parents found that once a child starts school, most services do not provide home visits, and although it could be expensive, some parents employed private SLTs for this purpose. Parents were keen to enhance communication in the home environment and for this they desired the SLT to explain or demonstrate the strategies they were using at school:

> *'There's no point in our son doing things at school that then we're not following through at home' (parent of an autistic child)*

Conclusions

Parents' accounts described disparities in levels of access to specialist speech and language therapy services for their child. A recent report by the Children's Commissioner's office (2024) highlighted the inequalities children with CP, ASD and speech, language and communication difficulties face with access to appropriate services during their childhood. Children's communication does not develop in a silo at school and as other studies have found, parents need to be empowered in the home environment but not expected to become therapists themselves (Disabled Children's Partnership, 2021; Schladant and Dowling, 2020). Finally, in order to foster collaborative partnerships with health professionals, parents' early concerns about their child's development need to be taken seriously so that they can be provided with access to a clear diagnostic pathway (Abrahamson et al. 2021).

Next steps

We are currently analysing data from focus groups with SLTs to use alongside parent data to develop a list of potential items to be included in the outcome measure. We will send these out in a Delphi survey to gain the views of parents and SLTs on which items should be in the final draft of the outcome measure. Please contact the main author if you are interested in taking part in the next stage of the research study.

With gratitude to the parents who participated in this research study

Funding information: This research was funded by the National Institute for Health and Care Research (NIHR) Applied Research Collaboration Kent, Surrey, Sussex. The views expressed are those of the authors and not necessarily those of the NHS, the NIHR or the Department of Health and Social Care.

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The Missing Competency: Building the Right Environment for Organisational Change

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Introduction

Organisational change, especially in educational settings, is often a challenging but necessary process. Schools need to adapt to new policies, teaching methods, and support mechanisms to meet the diverse needs of their learners. In the presentation *"The Missing Competency: Getting the Environment Right"*, the focus was on how schools could use the free Ace Centre Resource - *A Guide to Writing an Effective AAC Policy in Education Settings* - to navigate these changes effectively. This paper summarises the case study work done by Ace Centre with a selection of specialist school settings in collaboratively creating an AAC policy to drive organisational change.

Legal Knowledge Gap in Schools

A key issue identified from the case study of specialist schools involved in co-creating this AAC policy guidance document was the lack of awareness among school staff about the legal requirements related to facilitating communication for learners. In many instances, teachers and staff were unfamiliar with the legal frameworks governing their support of children, particularly those with communication difficulties. This knowledge gap posed a significant risk, as schools could unintentionally fail to meet their legal obligations, potentially putting both the school and its students in vulnerable positions.

To address this, there was a clear need for structured training and resources to help staff understand their responsibilities. This included not only knowledge of legalities but also practical steps needed to ensure compliance. By closing this gap, schools would better safeguard themselves while providing the necessary support for their learners.

Legislation shared was as detailed below:

The United Nations (UN) Convention on the Rights of Persons with Disabilities (CRPD) Article 24 – Education provides the clearest guidance on the legal requirements of schools.

3. States Parties shall **enable persons with disabilities** to learn life and social development skills to **facilitate their full and equal participation in education** and as members of the community. To this end, States Parties shall take appropriate measures, including:

a) **Facilitating the learning of Braille, alternative script, augmentative and alternative modes, means and formats of communication** and orientation and mobility skills, and facilitating peer support and mentoring;

b) **Facilitating the learning of sign language** and the promotion of the linguistic identity of the deaf community;

c) Ensuring that the education of persons, and in particular children, who are blind, deaf or deafblind, is delivered in the most appropriate languages and modes and means of communication for the individual, and in environments which maximize academic and social development.

The policy creation also incorporated key documentation published by the Department for Education. As detailed below:

- In 2001, the SEN Code of Practice proposed the concept of 'pupil participation'.
- The Children and Families Act 2014 (Part 3; Children and young people with special educational needs and disabilities) further consolidated this.
- In 2015 the Revised SEN Code of practice stated that local authorities must ensure that children, their parents and young people are involved in discussions and decisions.
- The recently published Green paper from the SEND Review 2022 highlights the importance of co-production.

It soon became clear in discussions with teams in the case study, that co production and discussions could not be had with learners, who had no means to be able to communicate. Therefore, the need to facilitate the effective use of AAC for some learners would be key to achieve co production.

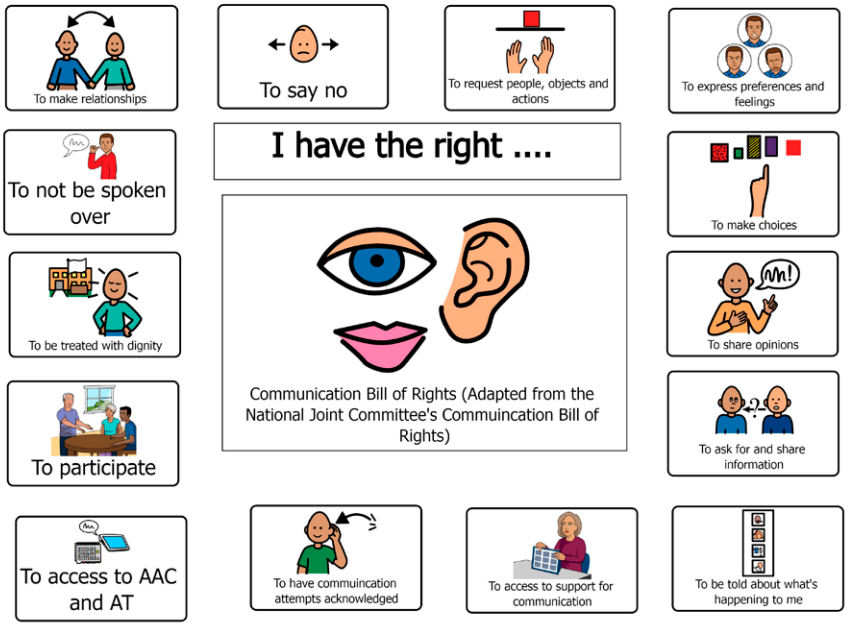

Figure 1: The communication Bill of Rights

The Role of Visual Aids to Make the Policy More Accessible to all

Another key point drawn from working with the selection of specialist settings was the importance of making policies accessible. School staff reported that traditional policy documents were often full of educational terminology and very text heavy, making them difficult for many readers to access. Staff felt that policies were often created behind closed doors and therefore did not consider the full range of the audiences who would need to access the document. School staff agreed that they need to be easily accessible to students, families, carers and school governors, as well as the staff team.

The case study schools suggested that introducing visual aids to represent key elements of policy documents could make them easier to understand for staff, students and families. Visual aids, such as photographs, diagrams, and charts, helped to break down complex information into easily accessible sections.

Clear visual references were particularly useful in schools with diverse communities, where language barriers existed. By incorporating universal symbols and clear graphics, schools ensured that the information in the policy was more accessible to everyone.

Collaborative Policy Development for Ownership

The case study work also highlighted the importance of involving staff in the policy development process. When school staff worked together to develop an AAC Policy, staff members felt more of a sense of ownership and responsibility. This collaborative process allowed for the creation of an AAC policy that was tailored to the unique needs of each school, making them more practical and applicable for staff.

Involving staff at various levels created a sense of community and collective responsibility. When everyone had a voice in their AAC

Figure 2: Means, Reasons, Opportunities Diagram

policy creation, there was a greater likelihood that the AAC policy they had created would be followed, as they were seen as the product of joint effort rather than an imposition from above.

This approach also encouraged continuous feedback and improvement. Staff who were directly involved in policy creation were more likely to identify gaps or issues as they arose and be proactive in looking at ways to continually improve AAC support in school.

Clarifying Roles and Responsibilities to Reduce Overload

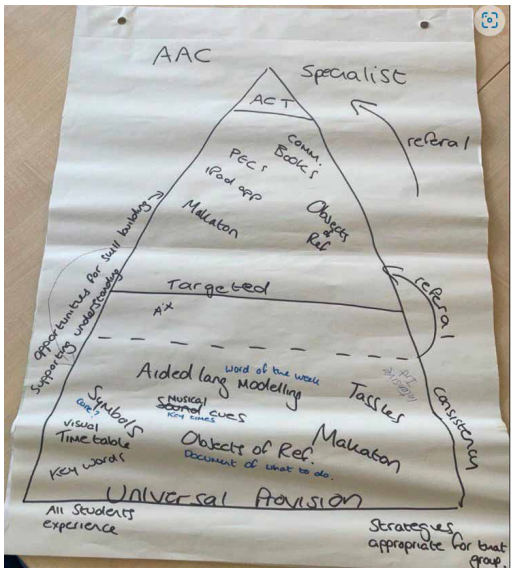

Figure 3 – Hand drawn Diagram of Collaboration of Ideas

A key theme identified from Ace Centre's case study work with specialist settings was the need to manage staff workloads more effectively by clarifying roles and responsibilities. Many schools struggled with the assumption that all staff members needed to be fully informed about every aspect of AAC from the different options available, implementation of AAC with the students, all the way to technical support with electronic AAC. This often resulted in staff feeling overwhelmed and withdrawing even basic support to wait for specialist staff, such as speech and language therapists, where there could often be lengthy waiting lists for a child to be taken onto a therapist's case load.

Discussions from the case study schools highlighted that not every staff member needed to be an expert in all areas of AAC provision. Instead, schools should focus on identifying key individuals responsible for specific tasks, ensuring they received the necessary training and support to become confident in their allocated role. These AAC champions could then act as points of contact for other staff who only needed to know the basics or specific parts of the policy relevant to their role. The AAC champions would also be the staff members who take responsibility for the onward referrals to therapists to ensure that referrals are appropriate and that school staff have already given that universal AAC support, so that more formal assessment and targeted support was now appropriate.

This targeted approach to roles and responsibilities when supporting AAC users allowed schools to provide more targeted and appropriate support without overloading the entire staff. As a result, educators could feel more confident in their ability to handle changes without the stress of trying to absorb too much information at once.

Effective Training Programs

The case study work highlighted the importance of providing effective training programs to support organisational change. Many schools found success by offering training sessions that were concise, relevant, and tailored to the needs of their staff in specific roles. Rather than bombarding staff with general information, schools were encouraged to offer training specific to the identified roles and responsibilities as documented in their AAC policy. For example, all staff would receive training in aided language input, but only the AAC champions would receive training on access method skill development.

Creating a Supportive Environment for Change

A key theme from the case study work was that schools must create an environment conducive to change. This involved not only providing the necessary training and resources but also fostering a culture of open communication and collaboration, no matter what role held in the school. When staff felt supported, they were more likely to embrace changes and work together to implement them effectively.

Conclusion

In summary, *"The Missing Competency: Getting the Environment Right"* offered insights into how schools could support organisational change. By addressing the knowledge gap around legal obligations, making policies more accessible through visual aids, fostering collaborative policy development, clarifying roles, and providing targeted training, schools could create a supportive environment for both staff and learners. Ultimately, this approach ensured that organisational changes around supporting AAC users were implemented successfully and sustainably, benefiting the entire school community.

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Seeing to Listen: How Visual Interaction Analysis Can Reveal the Creativity and Agency of Children who Use Augmentative and Alternative Communication (AAC) at School

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Introduction

Communication is often thought of as one person speaking and another receiving their message. But for many children who use AAC, communication is something they do with their whole bodies. A glance, a pause, a shift in posture, or a vocalisation can all carry meaning. The importance of these subtle, embodied forms of communication are often overlooked.

As a speech and language therapist and researcher, I am interested in how children who use AAC express themselves. This includes how they use AAC systems to speak, but also through the full range of modes available to them. In my research, I have found a useful method to understand these interactions: Visual Interaction Analysis (VIA). Originally developed to study how professionals like surgeons coordinate their actions without speaking, VIA helps us see the richness of communication that happens beyond words.

In this article, I'll share how I have used VIA to explore classroom interactions involving children who use AAC. I'll show how this method can reveal the creativity and agency of children in ways that traditional approaches which focus on talking might miss, and how it could help us design more meaningful communication support in schools.

What is Visual Interaction Analysis (VIA)?

Visual Interaction Analysis (VIA) is a way of studying how people communicate without relying solely on speech. It was first developed to understand how professionals, like surgeons, coordinate their actions in high-pressure environments (Heath et al, 2018). In an operating theatre, for example, a surgeon might not say, "Pass me the scalpel," but instead glance at the instrument tray or hold out a hand in a certain way. The nurse or assistant understands this cue and responds instantly. These small, often unnoticed actions are crucial to the success of the operation.

VIA involves carefully watching video recordings of these interactions, frame by frame, to understand how people use their bodies, eyes, and movements to communicate. It does not set out to judge or improve on what people do. Instead, it highlights the skill involved in these subtle exchanges.

How VIA helps us understand AAC interactions

Most AAC research involving children and young people has focused on one-to-one interactions, for example, between the AAC user and their teacher (Savolainen et al, 2020) or peer (Clarke and Wilkinson, 2007). These studies, often using Conversation Analysis (Sacks et al, 1975), have shown how meaning is co-constructed: how both the AAC user and their communication partner interpret and build on each other's contributions to reach shared understanding.

But real-life communication, especially in classrooms, is rarely limited to just two people. Children who use AAC are often part of group activities, surrounded by peers, teaching assistants, and teachers. These multi-person interactions are more complex, and researchers have only recently begun to explore them in detail (Ibrahim et al, 2023).

In these multi-modal, multi-person interactions, children who use AAC are incredibly resourceful. They do not rely solely on their AAC systems. They use everything available to them: classroom materials, the layout of the room, their gaze, gestures, and the tone or intensity of their vocalisations (Ibrahim et al, 2023).

This is where VIA becomes especially useful. By closely examining and transcribing video recordings of classroom interactions, VIA allows us to see how communication visually unfolds moment by moment, not just through words or symbols on a screen, but through the whole body and everyone in the environment. It helps us understand how mutual understanding is achieved even when no one is speaking.

How I used VIA in my research

To understand how children who use AAC communicate in their education setting, I needed a method that could capture the fine details of interaction: every glance, gesture, pause, and movement. I began by selecting short clips, no more than five seconds long, from video recordings of small group interactions. These moments were chosen because they showed something interesting or meaningful happening between the children and staff. I then took still images from the video and laid them out in sequence across a page, like a storyboard.

Beneath each image, I transcribed what was happening in tenths of a second. This included any spoken words, AAC utterances, and subtle changes in tone, volume, or pace. I followed established transcription conventions used in AAC research to make sure I captured the richness of the interaction (von Tetzchner and Basil, 2011).

I then mapped out visible actions using notation conventions outlined by Heath et al (2010) (see table 1). This allowed me to record where people were looking, how they moved, how they interacted with objects in the room etc. I used graph paper to help me map everything out, each small square representing a tenth of a second. This allowed me to see how talk and action unfolded together, moment by moment.

Feature of gaze and/or movement	Notation
Participant is looking at an object	Series of dashes with each dash representing one tenth of a second _ _ _ _ _
Participant is looking at another participant	Series of dots with each dot representing one tenth of a second . . . . .
Participant is looking away from another participant	Series of commas with each comma representing one tenth of a second , , , , ,
Participant is moving	Continuous line with description e.g. _____ B places finger on page
Passing of seconds within interaction	A single comma within a series of dots or dashes indicates one second has passed, e.g. _ _ _ _ _ _ _ _ _ , _ _ _ _ _ represents 1.5 seconds

Table 1: Visual transcription notation (Heath et al, 2010)

Once I had this detailed transcription, I created a clearer, more visual version using Microsoft PowerPoint (see figure 1). Figure 1 shows only two participants, but it is possible to add a line for everyone involved in the interaction.

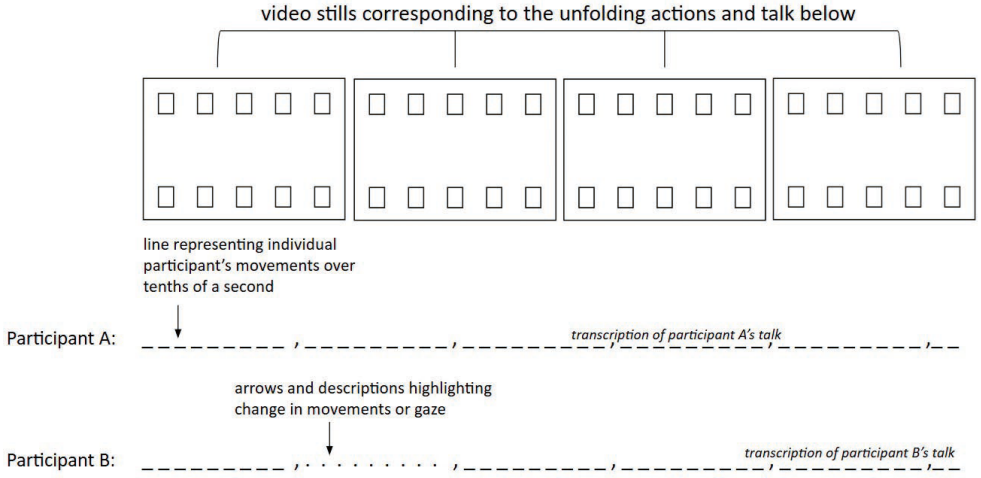

Figure 1: Elements of a visual transcript

The process of VIA transcription and analysis led me to new insights. It showed how children who use AAC co-construct meaning not just through words, but through a whole choreography of movement, attention, and shared space.

An example from my research

In my research project, we explored what children did or did not like about their school in small groups. The children, aged 9 to 12, used a range of communication methods, including aided and unaided AAC. They were supported by familiar learning support assistants, a specialist AAC teacher, and me, an unfamiliar adult and researcher.

In one session, the children led us to the school library, a place they liked in school. They then used an iPad to take photographs of things they liked or disliked within the library. These photos would support us to talk about their views in more detail later in the project. I had asked the adults to let the children take the lead, rather than directing them.

One child, C, was exploring independently. He had access to both the iPad and his communication aid, but he did not use the AAC device during this interaction. Instead, he was quietly vocalising to himself while taking photos of a large book laid out on the floor. Suddenly, he vocalised more loudly "uh teh!", which caught my attention. I assumed he might be having trouble with the iPad, so I approached him.

But C did not turn to me or ask for help. He stayed focused on the iPad, zooming in on a picture of a teddy bear. I asked, "Teddy?", trying to interpret his vocalisation. He did not respond directly, but repeated "teh" then added a longer, sing-song phrase: "yay yuh teh." This drew the attention of others in the room. I looked more closely, not just at the iPad, but at the book itself, and realised it was *Ten in the Bed*, the book version of the familiar nursery rhyme. C was singing it, in his own way. I joined in: "And the little one said…" and C followed with "rowu rowu" (roll over, roll over). We sang together, and the other children and adults smiled. It was a joyful moment. C had initiated and led the interaction, not to request help, but to share something he liked. He had communicated successfully, using his voice, his body, objects (book and iPad) and the environment around him.

Using VIA, I went back to this moment and analysed it in detail. I looked at how C used vocalisations, repetition, pausing, persistence, gaze, and movement to initiate and maintain the interaction. I also saw how shared cultural knowledge, a nursery rhyme, helped me interpret his meaning. This was not just a child's utterance being understood. It was a co-constructed moment of shared understanding, led by the child.

This example highlights something important: communication is not just about sending and receiving a message. It's about building meaning together. And children who use AAC, whether or not they use their device in a given moment, are skilled, resourceful communicators. They use everything available to them: their voice, their body, the people and objects around them.

Implications for AAC practice and intervention

By using VIA, we can better understand what makes multi-modal, multi-person interactions successful. We can identify the subtle cues that lead to shared understanding, and the conditions that allow children to take the lead. This opens the door to more inclusive, responsive, and empowering approaches to AAC support, ones that reflect the real, dynamic nature of communication in children's everyday lives at school.

Traditional AAC support often focusses on helping the child become more proficient with their device: expanding vocabulary, improving sentence structure, or increasing the frequency of device use. While these goals are important, they do not capture the full picture of how communication happens in real-life settings like classrooms. A shift in intervention focus is required: from individual competence to collaborative interaction.

Collaborative interaction interventions could be developed that are more representative of a child's life at school. These might include evidence-based strategies like aided language modelling (where adults model the use of AAC), but also go further, acknowledging and developing the contributions of peers and educators in reaching mutual understanding. Rather than focusing solely on the child's ability to produce a message via their AAC system, these interventions would support the whole ecology of interaction: the shared space, the timing, the materials, and the relationships that make communication possible.

Conclusion

Every child deserves to be heard. For children who use AAC, we might need to learn how to see what they're already saying. Visual Interaction Analysis reveals that children who use AAC are not just passive recipients of support; they are active, creative, and resourceful communicators. They use their whole bodies, their environments, and their relationships to express themselves and connect with others.

In the classroom, these moments of connection often happen quietly, through a glance, a gesture, a shared rhythm. They can be easy to miss if we are only listening for words. But when we pay attention to the full *visual* picture, we see something powerful: children leading interactions, shaping conversations, and sharing what matters to them.

We need interventions that value and promote communication in all its forms. Understanding doesn't always come from speaking clearly; it comes from listening differently. And when we do, we open up new possibilities for inclusion, connection, and joy.

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Empowering a Positive Shift in Systemic Mindset

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Introduction

During the Communication Matters conference 2024, we presented a workshop which would provide a forum for the exchange of lived experiences. Our workshop focused on three key areas:

- Creating a space for the exchange of lived experiences.
- Sharing of ideas related to overcoming barriers created by fixed mindset.
- Reflection on insights and trends found in our research.

By focusing on the above areas, we aimed to identify actionable strategies that attendees could take away to promote a positive shift in mindset when working across all aspects within the field of AAC.

The workshop was delivered by Melanie Boyle and Ceanna McGregor and was a collaborative effort of the 'Scottish AAC Geeks' who met at CM 2023 and bring together a combination of personal and professional experiences related to AAC.

One common barrier we encounter daily in our various roles are those with a fixed mindset.

Mindset

When people begin on a journey to using AAC, they need people around them to believe in that journey. They also need people who are ready to understand the benefits of AAC, the support required and be open minded to possibilities, ideas and potential, i.e. a positive mindset.

When people have a fixed, negative mindset to AAC implementation this acts as a barrier at all levels of AAC provision - from policy and legislation, therapy support, equipment provision etc. Ultimately, this results in people who would benefit from AAC, not being able to access the resource they need.

The more we can share positive outcomes, patient stories and demonstrate the important impact of AAC, the more we can influence positive shifts in mindset.

AAC Leader

We can all be AAC leaders, at all levels, and we can all influence change by creating ripples through the everyday AAC conversations we have. This image below describes how we see AAC leadership.

Consider the following leadership journeys:

Example 1 - You may be a listener today, but next year, you could be at the Communication Matters Conference presenting your own workshop as a contributor.

Example 2 - For now you may be an advocate for AAC. Next year with your newfound awareness you may become an innovator.

Now think, what are your strengths and how do they fit with AAC leadership opportunities?

Which of these roles are you good at?

Which roles have you not yet considered?

Which roles could you do more of?

Which roles might push you out of your comfort zone?

What is your next step as an AAC Leader? Recognise the courage required in taking a small step, maybe out of your comfort zone. Courage is the ability to take action despite fear. Confidence is the feeling we have **after** building experience from taking action.

With courage and experience, we as AAC leaders have the potential for AAC to enhance a child's communication abilities.

Research

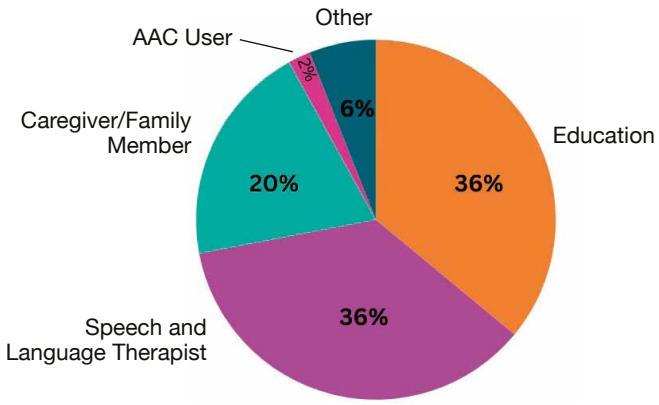
We created a survey to explore attitudes around AAC implementation ahead of CM2024 - sharing the survey widely across our networks to include people who have both personal and professional relationships with AAC. We used a combination of multiple option questions and open space for people to share any related comments.

We hoped to gather positive experiences and ideas, particularly in overcoming challenges and in embedding realistic strategies to support AAC.

This survey did not aim to gather an in-depth understanding of the intricacies of mindset and related psychology behind those opinions and experiences.

There were 50 respondents from across the UK, Ireland and the USA as well as 1 from France. 92% were supporting someone using High tech Robust AAC such as speech generating devices shown in Chart 1.

Chart 1: Link to AAC. Shows the respondents' links to AAC are evenly spread. On closer inspection, 1 respondent revealed they identified as both a parent and an SLT.



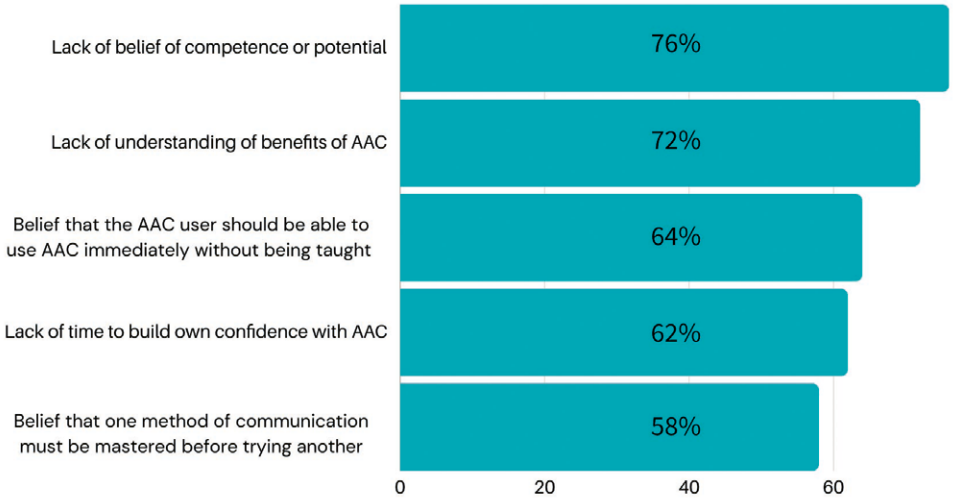
Negative Attitudes

Question 4a

"What negative attitudes have you encountered in implementing AAC?"

The top 5 results strongly correspond with our own experiences. These are shown below.

Chart 2: Negative Attitudes Encountered. Chart 2 shows the top 5 results of question 4b with responses between 58% and 76%.



What this shows us is that knowledge around AAC, myth busting and education needs to be shared more widely. It's likely many of you working in the field of AAC are doing this already.

Vasić and Slavković in 2023 also highlighted a call to action for more education and training in this area, namely for SLTs.

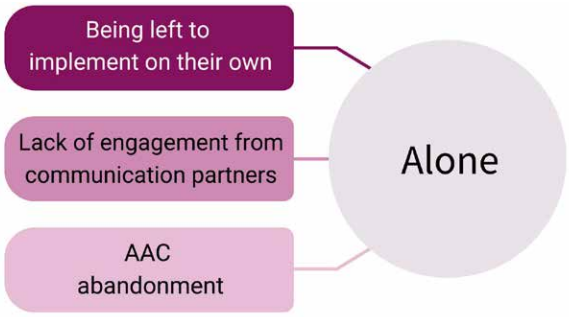
Question 4b

"What impact did these negative attitudes have?"

Responses demonstrate a situation where everyone felt they were left on their own whether they are an AAC user, Parent, Teacher or SLT.

You might relate to feeling alone in advocating for the importance of AAC. How might you create networks, join communities and feel part of a wider movement?

> *"Beliefs are individual, but highly influenced by others. The probability of one person adopting a belief increases with the number of people already holding that belief." Petit (2019)*



That is why we became The Scottish AAC Geeks! We now feel empowered rather than alone. Together we can initiate change.

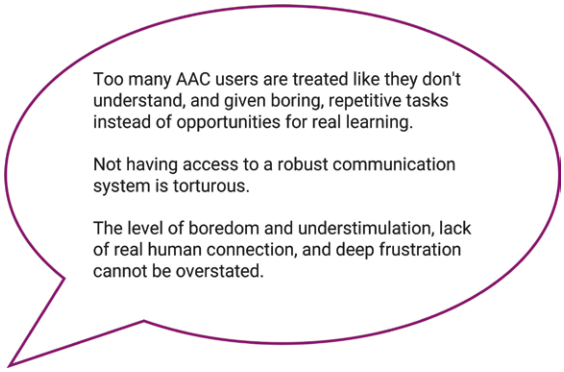
Here is a taste of the responses to this question.

Caregiver: *"Tricky to implement when family life is busy and siblings demanding more time."*

Teacher: *"Feeling my hands were tied in making decisions about AAC for my pupils due to speech and language therapists' opinions."*

SLT: *"Families of my patients rely on me for implementation."*

This AAC user emphasizes the emotional impact.



A final note really echoes what the AAC user felt and highlights that, no matter what your link to AAC is, there are barriers due to negative mindset which impact the AAC user's progress.

> *"Lots of missed opportunities to benefit the student as a result of adult beliefs."*

Question 4c

"How are you overcoming/ have you overcome these negative attitudes?"

The majority of respondents strongly agree on the following points:

- 78% Small steps
- 76% Creating an environment that encourages communication opportunities
- 76% Using AAC to teach AAC
- 72% Understanding that learning language takes time
- 72% Sharing best practices and strategies.

In no particular order strategies respondents offered as beneficial were;

- Getting younger siblings involved
- Meet people where they are and build from there.
- Joining an AAC club to keep momentum going
- Taking a whole school approach
- Listening and speaking to other AAC users
- Following and reaching out to people online who use AAC or support AAC users.

Positive attitudes

Question 5a

What positive attitudes have you experienced in implementing AAC strategies and tools?

We offered some ideas with space for suggestions and comments.

- Belief that there is NO hierarchy of mastery in learning AAC
- Belief in competence
- Belief in potential
- Understanding of the benefits of AAC
- Understanding that AAC supports speech and language development.
- Understanding that teaching AAC is the responsibility of all
- Understanding that learning to use AAC takes time
- Willingness to learn
- People incorporating AAC into daily activities
- Modelling without expectation.

The consensus of opinion of respondents indicated that they had experienced each of the suggested positive attitudes when implementing AAC strategies and tools. One participant added that:

> *"All these are present in some people in small doses."*

This statement encouraged us to reflect on how often WE observe positive attitudes in our networks and environments. The focus of our workshop was shaped by this.

The results of the penultimate question found more than 70% of our respondents felt that the impact of positive attitudes increased engagement from their AAC users. Leading academics and practitioners in AAC agree that the end goal with AAC is that the AAC user has autonomy over their communication and this is what positive attitudes are leading towards Gayle Porter (2015).

Communication Matters Conference 2024 Workshop

Activity W1

We asked attendees of our workshop during the CM conference 2024 to do a self-evaluation on their own experience of positive attitudes in implementing AAC strategies and tools.

When discussing the results in real time, it was clear that this was a challenging thing to evaluate. Attendees shared that working across different environments such as clinics, schools, in the home etc. With people who represent all different stages of experience and knowledge around AAC meant that the attitudes varied greatly depending on the context. Radici et al (2018) found teachers with more experience with AAC had more positive attitudes and beliefs towards their own and their student's ability to use AAC. This was reflected in our discussions of stakeholders across different environments.

As there was a small number of respondents, the results are inconclusive, nonetheless they created rich discussion in an area that we wish to explore further.

Activity W2

The final activity in our workshop brought up rich discussion. In the survey we asked participants "What do you do to maintain positive attitudes in their circle?". Each of the following suggestions rated highly:

- Share success stories and 'wow' moments
- Collaborate with others
- Be curious and open-minded about best practice in AAC
- Advocate
- Be a role model for others
- Continuously educate yourself and others
- Innovate and create
- Learn from AAC users and allies.

To build on this and create actionable strategies we asked attendees of the workshop "What does this look like in practice?". There is no checklist of what you need to do to cause a systemic shift in mindset. Settings and experiences are different for everyone.

For example: if we take the first one here *"*Share success stories and 'wow' moments*"*, the actionable strategy could be as simple as creating a WhatsApp group with other parents to share 'wow' moments as they occur.

Attendees were keen to contribute their ideas and suggestions on what is being done in their own work places. It forced them to think deeper about their own actions had already initiated a shift in systematic mindset within their circle.

Conclusion

We aim to continue this research and develop actionable strategies to overcome barriers in AAC mindset and effective AAC implementation.

Be inspired

Scan this QR code which will take you to a short video showcasing real stories from our research participants.

Get involved

We welcome you to contribute your ideas and suggestions to raising the profile of AAC, please add your thoughts in this Google Doc. From this, we will compile suggestions and share them in a follow up article.

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AAC and Aphasia: Visual Scene Displays and Outcomes of a Service Evaluation

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Implementing augmentative and alternative communication (AAC) and achieving successful outcomes with people who have aphasia can be more challenging than with individuals who have acquired motor speech difficulties. The language systems typically used with other groups can be challenging for people with aphasia due to their language impairments. For instance, acquired dysgraphia (difficulty spelling) can make it hard for people with aphasia to effectively use the alphabet to communicate, and semantic impairments and associated cognitive difficulties can make it difficult for people with aphasia to locate target words in symbolised category based AAC systems.

In 2020, AAC West of England Specialist Team (AAC WEST) evaluated the service we were providing to people with aphasia and aimed to identify ways to improve outcomes for this client group. To guide our service evaluation, we reviewed the literature on AAC display design for people with aphasia. A key paper by Light et al. (2019) looks at the evidence informing the AAC design for adults with acquired conditions. This paper highlighted the limited evidence available on the design of traditional grid displays for people with aphasia and summarised the papers focused on the design and use of an alternative option: visual scene displays.

Visual Scene Displays

Visual scene displays include a contextual image that can be used as a shared point of reference for the person with aphasia and their communication partner. For people with acquired communication difficulties the language is presented in text boxes alongside the photo (Dietz et al, 2014; Griffith et al, 2014) – see Image 1. These can be considered to be hybrid designs as the messages are presented in a grid display, as opposed to hotspots on the image which are used more frequently with children (Light et al., 2019).

The literature indicates that the following design features can be beneficial for people with aphasia.

- The photos used in the visual scenes should include people engaged in the relevant activity, as this has been found to draw people with aphasia's visual attention (Thiessen et al, 2016).
- Personalised photos are preferred to generic photos (McKelvey et al, 2010; Dietz et al, 2014; Griffith et al, 2014).
- Using a navigation ring where thumbnails of the other visual scenes can be seen and accessed from all pages has been found to increase the ease of navigation (Wallace & Hux, 2014).

There is some research showing that the use of visual scene displays can increase the number of conversational turns taken by the person with aphasia and increased the complexity of information conveyed (Brock et al, 2017; Hux et al, 2010). They have also been found to reduce frustration in conversation and are perceived to be easier to use than traditional grid displays (Brock et al, 2017; Hux et al, 2010; Dietz et al, 2014). Additionally, Dietz et al (2014) found that the use of visual scenes increased the spoken utterances of people with aphasia, which combats the idea that AAC will result in 'learned non-use' and stop people from aphasia from using their speech.

However, as these studies report on single cases and small groups, the strength of the evidence from these individual papers is relatively low. Most also look at using visual scenes for story telling in experimental settings, as opposed to real life daily communication opportunities, and they measure outcomes related to impairment or activity, as opposed to participation or quality of life.

The service evaluation outcomes

The AAC WEST service evaluation, carried out in 2020 through a retrospective case note review, revealed several key findings that will be described here. A more detailed report of the evaluation results has been published in the Royal College of Speech and Language Therapy (RCSLT) Bulletin (Ackford, 2024).

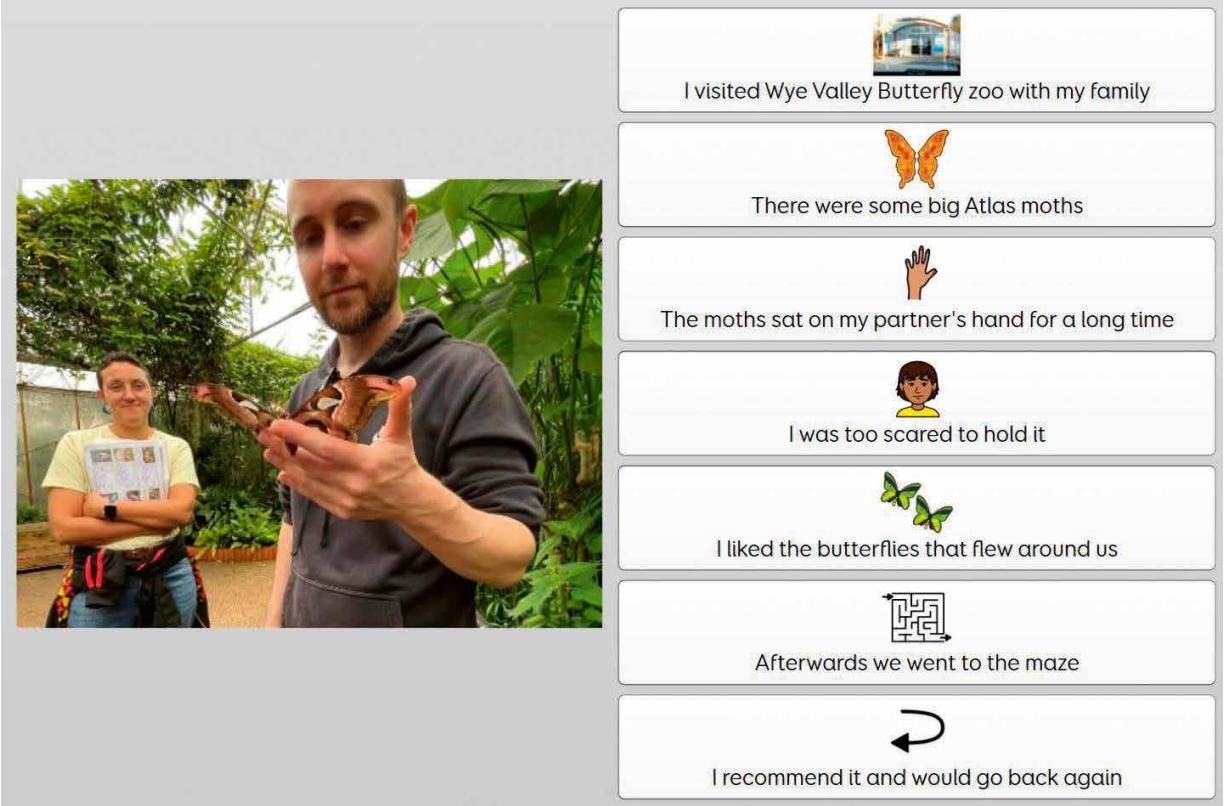

Image 1: VSD, Butterfly zoo.

The service evaluation highlighted that our service had primarily recommended bespoke grid displays, and rarely used visual scene displays. There was a significant improvement in Therapy Outcome Measures (TOM) (Enderby and John, 2019) scores for all people with aphasia in the domains of activity and/or participation, but little to no change in wellbeing and support scores. Additionally, around a quarter of people with aphasia made limited progress towards their goals and did not keep their powered AAC devices.

To assess how people with aphasia were using their devices in relation to the NHS England criteria, we examined the linguistic complexity of the utterances produced on their AAC devices. This also helped us to examine how the demands of linguistic complexity affected the results of the AAC intervention. Outcomes were notably worse for those with more linguistically challenging goals, such as combining a sentence starter with a topic word (e.g., "Let's go to + cinema").

In response to our literature review and the service evaluation results, we have adapted our approach to AAC intervention with people with aphasia. We have made the following changes to our service:

- **Departmental guidelines**: We have produced evidence based departmental guidelines to inform our input with this population.
- **Vocabulary options**: We are more informed about visual scene display options for people with aphasia (see below), and the evidence based design features for these, and are trialling and recommending more visual scene displays for people with aphasia.
- **Criteria**: To aim to improve outcomes, we are reducing the linguistic demands on the people with aphasia, whilst still evaluating their eligibility for specialised service input.
- **Training**: We have added more information around aphasia and AAC into our adult neuro training for local SLTs in our area.

AAC vocabularies for people with aphasia

The following are examples of AAC vocabularies that incorporate visual scene displays, and are available at the time of writing for people with aphasia.

1 **TD Snap app – Aphasia Pagesets**: Available in two sizes (3x4 and 5x6). The pagesets include topics with visual scenes (contextual images and phrases should be personalised), and the category word lists are designed for people with aphasia. There is a whiteboard which allows drawing, writing and importing photos, as well as saving multiple whiteboards for future use. Resources, webinars and training cards are available on the Tobii Dynavox website.

2 **Grid 3 / Grid for iPad – Aphasia Duo**: Available in a 9 cell and a 16 cell version. Includes topic visual scenes organised into category folders. Contextual images and phrases should be personalised and, to reduce navigation demands the most relevant visual scenes, can be identified and presented on the main 'scenes' page. The word lists contain sentence starters. There are additional conversational supports available in 'chat help', and the 'word help' section provides the option to use the semantic category or initial letter to support with word finding difficulties. There is also a whiteboard that can be used for drawing and writing (but no function to save them). Resources and webinars are available on the Smartbox website.

Conclusion

Since the service evaluation, we have been using the AAC vocabularies described above, but it is notable that they are considerably more complex than the AAC displays used within the research. Additionally, they incorporate features designed for people with aphasia but without an evidence base, such as complex semantically organised grid displays. There are currently no available AAC vocabularies designed for people with aphasia that utilise a navigation loop despite the evidence for these. This indicates that further research is needed in the area of AAC for people with aphasia, and further evidence based development of AAC vocabularies for people with aphasia is required.

As a number of people with aphasia have now been seen since the original service evaluation, it will be possible to re-evaluate the service in 2025.

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Aided Language and AAC in the Classroom

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I am currently a Senior AAC Consultant at Ace Centre, however previous to this I worked as a special needs teacher for a number of years, teaching many individuals with Speech, Language and Communication Needs, who use AAC. I have experienced first-hand the minimal support offered to teachers, particularly when first working with learners who use AAC. During my teacher training I did not, like many others nationally, receive training on how to best support these learners. I also experienced the difficulties in gaining consistent Speech and Language Therapy support. I found I spent our time researching AAC outside of the school day and gaining guidance from relevant suppliers of AAC devices to upskill myself. Too often teachers can be left in the dark regarding what approach is best to follow to enable these learners to thrive.

As a result of this experience, my colleague Katy and I wrote '***AAC and Aided Language in the Classroom: Breaking Down Barriers for Learners with Speech, Language and Communication Needs'*** to support educators like ourselves.

Underpinning all practice is the importance of communication. Communication as a basic human right, established in Article 19 of the Universal Declaration of Human Rights: "Everyone has the **right to freedom of opinion and expression**; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas ..." Educators have a duty to ensure this is met.

One visual to break this down in an accessible way is Money and Thurman's (1994) model of communication (Fig. 1). This stresses the importance of a total communication environment where learners are given the means, reasons and opportunities to communicate. To have the greatest success, each of these should be included.

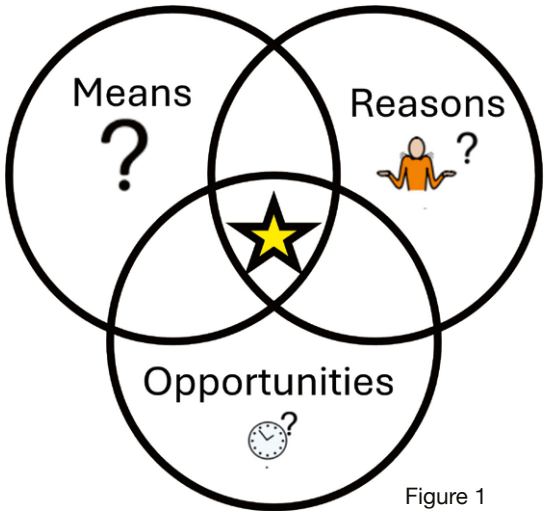

Figure 1

These can be broken down as follows.

Means relates to *what* aided language an AAC learner is using to communicate. There are several factors when considering the most appropriate AAC system for a learner. This includes considerations regarding whether to use unaided or aided communication; paper-based or electronic; symbol or text-based vocabularies; and how the user will access the communication system to name a few.

Ace Centre have a range of paper-based resources, including communication boards, books and alphabet charts which provide a means for AAC users to communicate (Fig. 2).

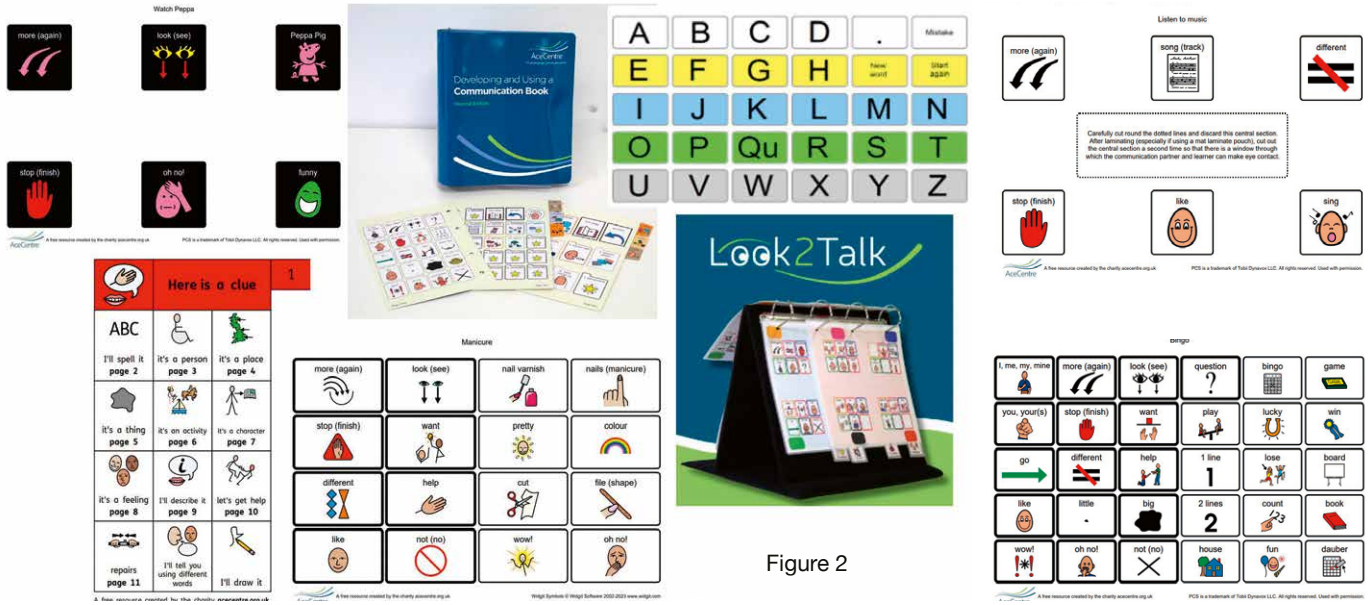

Figure 2

Reasons relates to *why* learners communicate. Learners should be given opportunities to use a range of language functions (Light, 1988) within the classroom. Examples of these could include:

- Gaining attention
- Greeting others
- Making requests, including: a person, an object, an event or action, to repeat something, to stop and help
- Give information
- Protest/deny
- Feelings
- Preferences
- Negotiation
- Discussion
- Planning.

Figures 4 and 5 give a visual representation of a variety of these. Core vocabulary is key in enabling a learner to develop their communication skills to use a vast array of language functions, beyond simple requesting, using vocabulary such as *stop, go, help, more, like*. This vocabulary is able to be used across contexts so supports the generalisation and transference of learning.

Figure 3

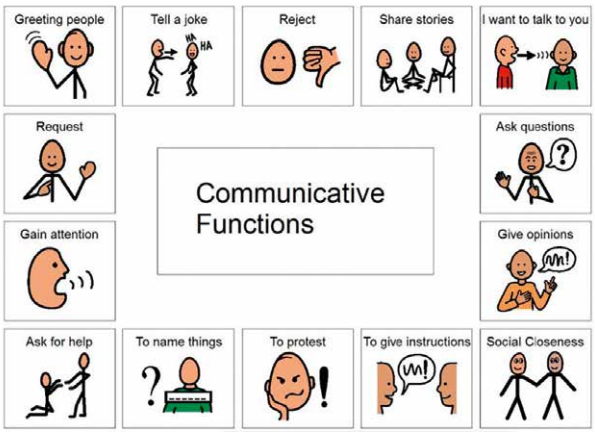

Figure 4

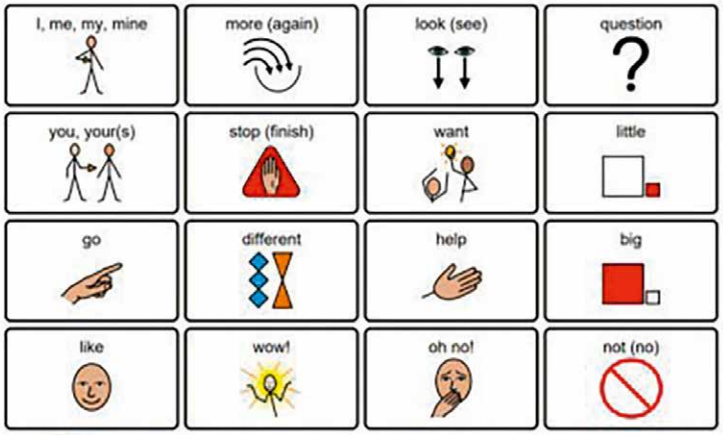

Figure 5

Opportunities relates to *how* learners communicate. Through giving rich opportunities for AAC learners to participate across a range of contexts, this will enable learners 'to say whatever I want to say, to whoever I want to say it to, whenever I want to say it' (Porter, 2018). This is fundamental to the successful implementation of aided language and AAC in the classroom and beyond. Teachers can fall into the trap of using aided language within the classroom context, however do not always take the learning outside the classroom environment.

AAC learners should be given the opportunity to communicate with a range of communication partners, including those who are both familiar and unfamiliar. This can include family, friends, carers, school staff, as well as when going shopping, to a coffee shop etc. There is a need to give learners opportunities to use their AAC device in a range of locations, including when at home, school and in the community.

	Mon	Tue	Wed	Thur	Fri	Sat	Sun
07:00	Home	Home	Home	Home	Home	Home	Home
08:00	Home	Home	Home	Home	Home	Home	Home
09:00	Setting	Setting	Setting	Setting	Setting	Home	Home
10:00	Setting	Setting	Setting	Setting	Setting	Home	Home
11:00	Setting	Setting	Setting	Setting	Setting	Home	Home
12:00	Setting	Setting	Setting	Setting	Setting	Home	Home
13:00	Setting	Setting	Setting	S&LT	Setting	Home	Home
14:00	Setting	Setting	Setting	Setting	Setting	Home	Home
15:00	Setting	Setting	Setting	Setting	Setting	Home	Home
16:00	Home	Home	Home	Home	Home	Home	Home
17:00	Home	Home	Home	Home	Home	Home	Home
18:00	Home	Home	Home	Home	Home	Home	Home
19:00	Home	Home	Home	Home	Home	Home	Home
20:00	Home	Home	Home	Home	Home	Home	Home
21:00	Home	Home	Home	Home	Home	Home	Home

Figure 6

Figure 7

Giving AAC learners time to use their AAC system across the day also plays a huge part in AAC learners developing confidence to use their device independently to initiate conversations (Fig. 6). In some schools a speech and language therapist may be able to support specific learners, however if this is solely for an individual session a week, the learner will struggle to generalise the learning into their daily life. Engagement from families is also plays a huge role. Learners spend the largest part of their day at home, so offering support for families enables learners to transfer their learning outside of the school environment.

Many schools are seeking opportunities to support AAC learners outside the classroom, for example when playing outside in the playground. Many schools are putting in place communication boards like the one on the left from Ysgol Tir Morfa (Fig. 7).

Strategies – some ways in which you can help in the classroom?

The AAC learner can have the best, most appropriate communication aid with a mixture of reasons and opportunities to use it, however without effective strategies, AAC learners can struggle to develop their skills.

Gayle Porter's model (2004) created a visual to emphasise the importance of using the common language of aided language when supporting an AAC learner, using their AAC system (Fig. 8). There is a range of strategies which can support educators in order to give AAC learners the means, reasons and opportunities to communicate. The most significant of these being modelling. Teachers can find modelling a daunting task, but starting out small and being kind to yourself and building up your confidence and skills as a communication partner have a significant impact on the learner's progress.

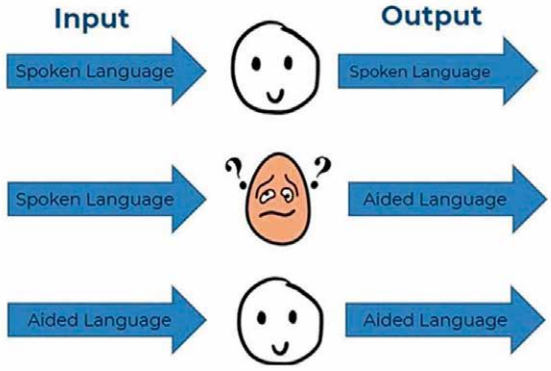

Figure 8

When considering modelling, there are 3 main types based on the needs and language level of the learner to support the use of aided language, using graphic symbols. These include the following:

Modelling

Modelling to Attribute Meaning:

- This is vital for your most complex pupils.
- This identifies what learners are communicating in non-verbal, non-formal ways.
- This Modelling type requires strong observation skills from the communication partner.
- An example this would be recognising if the learner is expressing excitement? If so, you would acknowledge this and model:

  "You seem **happy** today!".

Personal Modelling

- This occurs whenever you interact with a learner, modelling on their AAC system.
- This doesn't mean finding a symbol for every single word, which can be overwhelming for both the communication partner and AAC learner.

- This means using the available symbols on a learners communication aid to model a few words – ideally the core words. The key here is not to overwhelm yourself as a communication partner by putting pressure of modelling a full sentence. Instead, this should be functional for the learner.
- An example of this could be

  "Hi Tom! Do **you** want to **go** outside **now**?".

Scaffolding with Modelling

- This technique is for your more able communicators, already using their AAC system well.
- If the learner uses their device at a 1-symbol level, then the communication partner would model back to them at a 2-symbol level.
- If example of this could be:

  They say: "**grapes**" at snack time?

  You say: "Oh, you want **more grapes**?"

Figure 9

Peer modelling

Peers can be taught to be communication partners at a young age. Providing children with increased social learning opportunities within the context of shared AAC activities allows both partners to become more competent in their social interactions (Bourque 2020). Peer modelling can often be more powerful than modelling from an adult. This can be due to the language used being less structured, having a general 'chit-chat' about things and talking about random topics, outside of learning in the classroom context (Fig 10).

Descriptive teaching

Even those teachers who are familiar with modelling and use this strategy skilfully can become overwhelmed by the degree of vocabulary within a learners AAC device. They can fall into the trap of creating topic pages for each individual topic to equip the AAC learner with the specific vocabulary they may need within lessons. The difficulty with this is that the device can be full of vocabulary which a learner will not functionally use once the topic has finished. Instead, descriptive teaching focusses on using vocabulary which is already present on the device.

> *"Using a descriptive style, the teacher mentions and references the context-specific words, then teaches concepts behind the words using high frequency, re-usable, common words" (Van Tatenhove 2009).*

Figure 10

AAC learners benefit from access to aided language displays, underpinned by core vocabulary. This teaches core vocabulary to describe a topic, rather than curriculum specific vocabulary. This is a vital skill for lifelong communication, which can be generalised and transferred into everyday life.

Examples of these is when studying Egyptians, describing:

- Hieroglyphics as '*old, pictures, wall*'
- Tutankhamun as '*old, king, young, gold, blue, important.*'

Further information and strategies can be found in the book (Fig. 11).

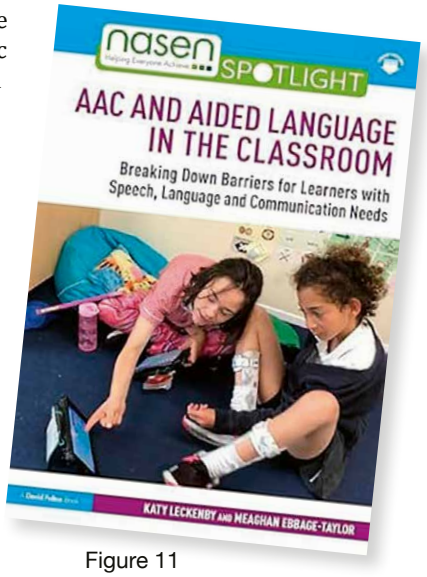

Figure 11

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Hosting My First People Who Use AAC Chat

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On November 6 2023, I hosted my first ever ISAAC international people who use AAC (PWUAAC) chat. The topic I chose was on medical staff and professionals' awareness of AAC, because when I go for my three-monthly injection, the nurses at the surgery are always in a rush to get through patients and don't take the time to listen to me, or read my partner window. As I am a very patient communicator, I find this annoying and wanted to find out if other AAC users felt the same.

The attendees came as far afield as Alaska USA. There were also several from Canada, and Mr Preece and Mrs Sullivan from Yorkshire. I got it published on the ISAAC website a week in advance so that people knew it was happening. My two questions were: "Do medical/social professionals take time to listen to your AAC?", and "What improvements can providers make to be better listeners for AAC users?" which were well constructed professional questions by my standard.

Before I did it for real, I did a test run with the regular hosts, Kevin and Patrick, to run through the running order and check that I could access my questions reasonably quickly. I managed this really well so after half an hour I did it for real at 7pm GMT.

Firstly, Patrick introduced me (both he and Kevin also use AAC) while I looked up my first question which was: "Do medical/social professionals take time to listen to your AAC?" My answer was in my own experience doctors and medical providers are always in a rush and don't take the time to listen. I had two experiences recently. One with the district nurse and one with the wheelchair service where, unless my dad had been there, I would not have been heard despite using prestored phrases on my Tobii Dynavox I13. Then I went around the room to see if anyone had anything to say.

Chelsie, one of the participants, said that she always prepares beforehand like me, (she's a switch scanner). She said that she programs her phrases in advance, and this seemed to be the general consensus.

My second question was "What improvements can services make?" Suggestions here included longer appointments to give time to talk.

To conclude, this was a great experience and I would like to do more in the future.

https://isaac-online.org/english/news/pwuaac-online-chats/

Safeguarding AAC Users: Strategies and Challenges

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Summary

The presentation from ATtherapy at Communication Matters 2024 focused on safeguarding vulnerable young people, particularly those using Augmentative and Alternative Communication (AAC). It highlights the significant challenges in safeguarding AAC users, including communication barriers, reliance on others for communication, and the increased risk of abuse due to vulnerability. The presentation used case studies to illustrate the challenges and explored strategies for early intervention and prevention, emphasising the importance of empowering AAC users through improved communication skills, accessible resources, and proactive communication partner training. Examples used were of physical, financial and psychological abuse.

Challenges

Covered were some of the safeguarding challenges that uniquely affect AAC users, namely:

- **AAC vocabulary:** AAC users may lack the vocabulary to express abuse, especially when it comes to complex concepts like consent, boundaries, and respect. This may be because their AAC vocabulary is not personalised, lacks appropriate symbols, or is laid out in a way that makes it difficult to find the right words. AAC users also need opportunities to explore new vocabulary without being misinterpreted or having their concerns dismissed. They need to be their own best, reliable witness and their vocabulary needs to enable them to achieve this.
- **Communication breakdowns:** AAC users may have difficulty communicating due to time constraints, reliance on prompting, or the asymmetry of conversations that may rely on closed questioning. This can make it hard for AAC users to share their experiences of abuse, especially if they rely on others to input the words or phrases they want to say. Well trained, experienced communication partners and positive communication environments are vital.
- **Reliance on others:** AAC users often rely on others to ensure their AAC device is available, charged, and functioning properly. This reliance can create opportunities for abuse, especially if the abuser is the one controlling access to the AAC device. It also makes it difficult for AAC users to disclose abuse, as they may only have 1:1 support with their abuser.
- **Doubts about communicative competence:** If an AAC user does disclose abuse, their communicative competence may be doubted. This can be especially challenging for AAC users who have difficulty with word order, grammar, and sequencing information, as it can make their narratives seem less credible.
- **Inaccessible safeguarding resources:** Many safeguarding resources are not accessible to AAC users, which can make it difficult for them to learn about their rights and how to stay safe. They may be aimed at an able-bodied population, with guidelines that are not appropriate to disabled people who require increased reliance on support such as personal care.

Strategies for support

The areas below were highlighted as requirements to educate and support AAC users in this area:

- **Proactive vocabulary development:** AAC users need specific vocabulary related to all areas of potential abuse, for example: feelings, finances, body parts and sexuality to effectively communicate their experiences and understand conversations about these topics.

  - Therapists and educators should proactively introduce and model this vocabulary. This includes personalising vocabulary based on the individual's needs and experiences. For example, if a child is experiencing conflict at home, adding vocabulary related to arguments and negative emotions might be helpful.
  - The vocabulary layout on the AAC device should be carefully considered to ensure easy access to important terms. For example, creating a dedicated page for "Something's Wrong" with relevant vocabulary can empower the AAC user to initiate conversations about difficult topics. Similarly, only organising vocabulary under 'Something's Happened' means that person can only explore the vocabulary with that context already set, which may lead to miscommunication or a reluctance to explore this. AAC users need to learn and talk about types of abuse and boundaries without necessarily reporting it has happened.
- **Safeguarding education:** AAC users need access to age-appropriate and accessible safeguarding resources.
  - This includes providing education on topics like consent, boundaries, and different types of abuse.
  - Materials should be adapted to the individual's communication needs. For example, visual aids and simplified language can be used to make complex concepts more understandable.
- **Communication partner training:** It's crucial to train communication partners, including family members, educators, and caregivers, on how to effectively support AAC users and how vital education is for AAC users in relation to safeguarding.
  - Training should focus on how to recognise and repair communication breakdowns, encourage initiation from the AAC user, and use open-ended questions to facilitate more detailed communication.
  - Partners should be taught to avoid assumptions about the AAC user's understanding and to provide ample time for the individual to express themselves.
  - Building positive, mutually respectful relationships fosters the environment for personal and difficult discussions.
- **Identification of trusted communication partners:** Collaboration with the AAC user, their family, and the support team is key to identify trusted communication partners.
  - This includes identifying trusted individuals the AAC user can turn to for help and establishing clear communication strategies for discussing and potentially reporting abuse.
  - For example, creating a "My Relationships Circle" can help the AAC user identify their support network.
- **Early introduction of safeguarding concepts:** Begin discussing safeguarding topics early, even with young children.
  - Related to physical or sexual abuse for example, start by teaching basic concepts like body parts, privacy, and appropriate touch.
  - Gradually introduce more complex topics as the child matures and develops their communication skills.
- **Language and narrative skills**
  - Teaching and valuing refusal, negative comments, opinions and feelings needs to form the basis for AAC users to report safeguarding concerns. Unless a person knows their negative feelings are valued and listened to, they will be reluctant to communicate anything that crosses boundaries.
  - Teaching narrative, grammar, word order, literacy etc. ensures that AAC users are their own best witnesses for the complex communication situations that unfold during safeguarding disclosures.

By implementing these intervention strategies, we can equip AAC users with the tools and knowledge to protect themselves, communicate their needs, and access support when necessary.

Supportive resources

- **Creation of a One Page Profile:** The One Page Profile is a tool recommended for AAC users to help with safeguarding. This could include:
  - **Communication methods:** A description of how the individual communicates, including the type of AAC system they use, their vocabulary level, and any specific strategies that support their communication.
  - **Comprehension level:** An overview of the individual's comprehension abilities, including their understanding of vocabulary, sentences, and complex concepts. This information helps others understand how to communicate effectively with the AAC user and tailor their language accordingly.
  - **Support needs:** Details about any specific support needs the individual has related to safeguarding. For example, if the individual has difficulty understanding complex concepts like consent or boundaries, this information should be highlighted.
  - **Personality and preferences:** A brief description of the individual's personality, interests, and preferred ways of interacting. This can help build rapport and create a more comfortable environment for communication.
  - **Emergency contacts:** A list of emergency contacts, including family members, caregivers, and relevant professionals.

The One Page Profile can function as a communication passport, providing important information to various individuals who interact with the AAC user, such as medical professionals, educators, and social workers. This can help ensure that everyone involved in the individual's care understands their communication needs and can support their safety and well-being.

It is important to have a collaborative approach when creating the One Page Profile. This involves working closely with the AAC user, their family, and their support team to gather accurate and relevant information. By providing a clear and concise overview of the AAC user's communication needs and safeguarding considerations, the One Page Profile can play a crucial role in empowering the individual and ensuring their safety.

We found the following resources contained some useful resources, although are not specifically tailored to AAC users:

Books

- **Dr. Christian's Guide to Growing Up Online:** This could be a valuable resource for AAC users, their families, and educators to learn about potential risks and strategies for staying safe online.
- **A Guide to Internet Safety for Children, Teens & Young Adults: An Ideal Gift From Parents To Their Internet Savvy Child:** This also focuses on internet safety for young people.

Online Resources

- **Safeguarding Disclosure Communication Aid:** This online resource likely provides AAC users with specific vocabulary and communication tools to disclose abuse. This can be crucial in empowering AAC users to report incidents and access support. AAC safeguarding board TES
- **Reducing Vulnerability for Nonspeaking People:** This AssistiveWare resource offers strategies and information on reducing the vulnerability of individuals who are nonspeaking. https://www.assistiveware.com/learn-aac/reduce-vulnerability-for-nonspeaking-people

Other Resources and Strategies

- **Preparation for Adulthood Workbook:** This workbook was created by ATtherapy to focus on preparing AAC users for adulthood, including topics related to safeguarding. The workbook includes activities like defining and understanding key vocabulary related to abuse, identifying trusted individuals in their support network, and practicing communication strategies for reporting concerns and is available on request.
- **Joint Sessions with a Psychologist:** Working alongside a psychologist has been key in ATtherapy's safeguarding work. These sessions could involve assessing the AAC user's emotional well-being, providing therapeutic support, and collaborating on strategies to address specific concerns.
- **One Page Profile:** ATtherapy have developed this document to provide a concise overview of the AAC user's communication methods, comprehension level, support needs, personality, and safeguarding considerations. Available here: https://www.attherapy.co.uk/resources
- **"My Ability":** ATtherapy have developed the "My Ability" resources (https://www.attherapy.co.uk/myabilityresources) in collaboration with a psychology service to support AAC users in exploring their identity.

Additional Resources

You may also want to explore the following resources:

- **The National Sexual Violence Resource Center (NSVRC):** The NSVRC offers a wide range of resources on sexual violence prevention and response, including information tailored for people with disabilities.
- **The Arc:** The Arc is a national organisation advocating for people with intellectual and developmental disabilities. They provide resources and support on various topics, including safeguarding.
- **Disability Rights Organisations:** Local or national disability rights organisations can offer guidance on legal rights, advocacy, and accessing support services related to safeguarding.

Remember to adapt resources and strategies to the individual needs of the AAC user. Collaborate with the individual, their family, and their support team to ensure a comprehensive and personalised approach to safeguarding.

Summary

AAC users present with unique challenges that make them vulnerable to safeguarding issues, whether this is physical, sexual, financial or psychological, including coercive control. It is vital that AAC users and their support network are fully informed of the challenges and are aware of their roles in ensuring AAC users have the tools, skills, networks and confidence to be their own best witness in the most challenging of situations.

Empowered Communication: Overcoming Disability with Technology in High-Demand Professions

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Abstract

This case study examines the adaptation of a female patient with multiple sclerosis (MS) who, due to a tracheostomy, is unable to speak yet continues to fulfil her professional roles as a lawyer and lecturer. The research employs a qualitative approach, focusing on the use of speech-generating devices, such as the Tobii Dynavox i-16 and predictive text software like Microsoft SwiftKey. The study demonstrates that these assistive technologies significantly improve her communication capabilities, enabling her to maintain professional productivity despite severe physical impairments. The findings underscore the importance of technological interventions in supporting individuals with disabilities in high-demand careers.

Keywords: Speech-generating device, AAC technology, communication methods, SwiftKey, mobility, voice

1. Introduction

Multiple sclerosis (MS) is a chronic, progressive neurological condition that affects the central nervous system, leading to a wide range of physical and cognitive impairments. Among these, communication difficulties are common, particularly in cases where the disease progression results in the need for a tracheostomy, as it impairs the patient's ability to speak (Katz Sand, 2015, p. 193; Compston and Coles, 2008, p. 1502).

This paper presents a case study of a female patient with MS who, despite facing severe communication barriers due to a tracheostomy and loss of speech, has successfully adapted to the challenges of her condition through the use of advanced assistive technologies. The central focus of this study is on speech-generating devices and predictive text software, specifically the Tobii Dynavox i-16 and Microsoft SwiftKey, and their role in enabling the patient to maintain her dual professional roles as a lawyer and a lecturer. These technologies, part of the broader category of Augmentative and Alternative Communication (AAC) systems, have been demonstrated to significantly improve communication capabilities for individuals with severe speech impairments (Beukelman and Mirenda, 2013, p. 45).

By examining her journey, the study underscores the importance of resilience, adaptability, and the integration of technology in enabling individuals with disabilities to remain active in high-demand professions.

2. Research Procedure

2.1 Problem Definition and Purpose

The primary problem addressed in this empirical research is understanding how a patient with a 12-year diagnosis of MS, who has a tracheostomy and is unable to speak, has adapted to her professional roles as a lawyer and lecturer. The study also seeks to evaluate the role that assistive technologies play in enabling her to maintain her professional activities despite severe physical limitations.

2.2 Objective

The study aims to:

- Explore the emotional and practical strategies employed by the participant to adapt to her condition.
- Identify the technological tools facilitating her professional roles, focusing on the usability and impact of assistive technologies like speech-generating devices and predictive text software.
- Analyse the challenges and practical applications of these tools in real-world professional settings such as courtrooms and lecture halls.

Figure 1: Tobii Dynavox i-110, dry-erase board and Tobii Dynavox i-16 (All photos are from the personal archive of the participant of the study)

Figure 2: A patient with MS in public with Tobii Dynavox i-110 and i-16 (All photos are from the personal archive of the participant of the study)

2.3 Methodology

This qualitative case study focuses on an in-depth analysis of a single participant. Data collection included interviews, systematic observations of professional activities, and evaluations of assistive technology effectiveness.

3. Results

3.1 Early Communication Methods

Initially, the participant's primary communication tool was a dry-erase board. While effective for simple tasks, this method was labour-intensive and inadequate for her demanding professional roles. Within weeks, her ability to write deteriorated, necessitating the adoption of more advanced tools. As Hustad et al. (2008, p. 85) state:

> *"The dry-erase board, though practical for basic interactions, proved insufficient for the high demands of professional engagements, especially as the patient's motor abilities declined."*

This early phase is illustrated in Figure 1, which shows the Tobii Dynavox i-110, dry-erase board, and Tobii Dynavox i-16.

Figure 3: A patient with MS uses the Tobii Dynavox i-16 nowadays at work and home (All photos are from the personal archive of the participant of the study)

3.2 Technological Advancements

The Tobii Dynavox i-16, a speech-generating device, and Microsoft SwiftKey, a predictive text software, have proven transformative. These tools enabled her to:

- Prepare and deliver lectures with precision.
- Engage in interactive sessions with students and legal peers.
- Maintain efficiency in professional environments (Fried-Oken and Bersani, 2000, p. 112).

A real-world example of her using the Tobii Dynavox i-110 and i-16 in public is shown in Figure 2.

3.3 Adaptation Strategies

Preparation and organization are key components of her adaptation strategy. Using predictive text technology, she composes lectures and courtroom arguments in advance, ensuring smooth delivery. While AAC systems require patience from her audience, they allow her to communicate complex ideas effectively.

Her current use of the Tobii Dynavox i-16 in her daily professional life, at both work and home, is shown in Figure 3.

4. Conclusion

This case study highlights the transformative potential of assistive technologies in enabling individuals with severe disabilities to maintain demanding professional roles. The Tobii Dynavox i-16 and Microsoft SwiftKey have been instrumental in overcoming communication barriers, enhancing the participant's professional efficacy and personal empowerment. The findings emphasize the need for continued innovation in AAC tools and the importance of fostering inclusive environments (Johnson and Stoltz, 2020, p. 48).

Through her resilience and adaptability, the participant serves as an inspiring example of how advanced technologies can support individuals with disabilities in achieving professional success. This research underscores the broader societal value of accessibility, innovation, and support for individuals with diverse abilities.

Acknowledgments

Special thanks to the participant and the European Law Faculty at New University, Slovenia, for their cooperation and support.

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