



Using Pictello for Social Interactions

The Pictello Project White Paper, 2015

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Our Focus

Being able to have conversations is an important life skill that can impact on your independence, connections with others and feelings of wellbeing and happiness. Those of us who can have a conversation take it for granted. We don't even have to say anything particularly meaningful. How often do we chat to our friends or work colleagues about the weather? The power of conversation is connection and participation. Conversations are also complex, multifaceted and fast-paced.

Children with a severe expressive communication impairment often miss out on conversations. Children who are hard to understand or do not speak at all have experienced “misconnections” for as long as they have been speaking. They don't get to practise or understand the power of casual connections through conversation. And as parents, caregivers and professionals, we might compensate for this by reducing our expectations of their spoken output. If children who are hard to understand only have to give a simple answer they will experience success. Success is important, but sometimes all that well-meant compensation can stop our children's conversation skills growing.

Children who don't speak at all have an even harder time of conversation. Augmentative and alternative communication (AAC), the support of spoken communication and facial expressions with visual displays (eg picture symbols), signs, gestures, physical cues and/or assistive technology, has come a long way in the past 30 years. While the time it takes to compile a message has reduced significantly as our inventiveness has increased, there is still a time lag that feels like decades in a conversational context. When a child who uses AAC is talking to a group of other kids, they forget to wait for the AAC user to compile his or her message. He or she often gets left behind and ends up spectating other people's conversations. Signing is much faster, but only works if people understand sign language, restricting your audience. Children with competent communication skills are often not taught how to communicate with people who use AAC and therefore avoid speaking to them. Much of the communication produced by people who use AAC is formal (eg “I want to watch TV”), and yet the rest of us spend most of our days speaking informally in conversations.



Definitions

In order to explain our approach to intervention, it is important to clarify and define exactly what we were looking at in our research.

communication (*noun*) making known or sharing information, thoughts or feelings

interaction (*noun*) acting on or in close relation with each other

conversation (*noun*) informal talk

(Collins English Dictionary, 2009)

Turntaking: the turns that are taken during conversation of each communication partner. In competent conversations this can be compared to a volley in tennis, with each partner making a contribution in turn. Turntaking consists of:

- **initiating:** to get someone's attention and introduce a topic
- **responding:** to answer or comment on your partner's previous contribution

Functions of conversation:

- **topic maintenance:** keeping a conversation about a specific topic going by answering questions, commenting about something that was just said
- **topic extension:** linking a topic with a new topic eg "speaking of music, did I tell you that I went to..."
- **joining a conversation:** approaching two or more people having a conversation and making a contribution when there is a break without taking over
- **conversational repair:** being able to "fix" a breakdown in communication by attempting to say something again, say it another way or use visual cues to help a communication partner understand what you are saying

Conversational scripts: are preplanned conversations about motivating topics. They are written in first person (the person tells the story and asks for information using the script) and contain open-ended questions to encourage information from the person listening to the script. They provide a framework and a prop for successful conversation.

Questioning: plays a critical role in conversational scripts. Open-ended questions or directions encourage more than a single word answer from a listener (eg "tell me about your day today"). Closed questions only require a short answer (eg "did you have a good day today?" only requires a yes or no).



Our Project

In Central Western New South Wales, Australia, we were given a small grant for a pilot study to research using Pictello to help children with a severe expressive communication impairment to have better conversations. Our focus was a “top down” approach. Conversation is at the top of the tree in terms of communication competence, and we didn’t work on any of the building blocks that contribute to a good conversation eg vocabulary, body language, sentence length, speech sounds. We didn’t even worry about whether or not the person using the story could understand what he or she was saying when sharing a story with someone else.

We knew that a lot of children were being given iPads in order to improve communication skills, but there was no published evidence that this worked. We knew from experience that iPads were often bought for the purpose of improving communication but often ended up being used for different purposes such as respite (movie player), taking photos or entertainment (games apps). While the attraction of iPads is in their flexibility as a technological tool, we wanted to identify and measure how they could be used to improve communication, specifically social interaction, within the school context.

Pictello is a personalised story book app. We chose Pictello because we could create digital “chat books” quickly and easily. Hard copy chat books have been around for a long time and are well known to support conversation for people with a severe expressive communication impairment. But they are more time consuming to make and change than digital stories. They also tend to include just one story. In Pictello you can use your own photos and type in text to that tells the story in a synthesised voice. You can also record audio to go with the story, but synthesised voices mean that it is faster to make a book because you don’t have to worry about background noise or the sound of your voice on the recording. Pictello offered a variety of Acapella synthesised speech voices, including four Australian voice options, and the option of making a story and copying it on another iPad. It also included the ability to make as many stories as your iPad storage would allow. It was suitable for all ages and also well supported with online tutorials.

With a team of two part time speech pathologists, an assistant principal from Carenne School and a research supervisor, we invited primary schools across the area to participate and to nominate students with a severe speech and/or language impairment.

We worked with nine students in three different schools. Only one student used an iPad for communication before the project. Three students were in a segregated setting (special school), four were in an integrated setting (support unit) and two were in a mainstream setting (local primary school). Eight of the students had an intellectual disability as well as a speech and language impairment. One student had autism spectrum disorder. One student had a severe physical disability and used a voice output communication aid. Two students completed the intervention at school only, and seven students used it between home and school. The following program was trialed with those students who used Pictello stories in both home and school settings.



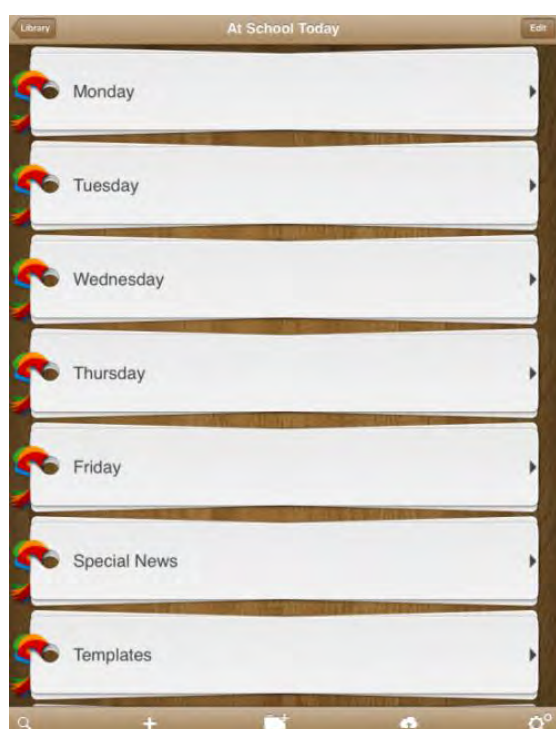
Our Program

As mentioned before, conversations are highly complex and recreating them for someone else is hard to get your head around. We met with families and school staff together, explained what we wanted to do and showed them how to use Pictello to create stories. In order to keep the children motivated and the stories relevant, we had to ensure that stories changed regularly. For busy households and classrooms, this meant creating a system that allowed for easy editing that would take a couple of minutes in the course of the day.

For the seven students who were participating in the intervention at home and at school, the goal was for them to each be able to tell their families what had happened at school that day. The families had an easier job, and only had to create a story about their weekend. However, many of the families made lots of stories once they became proficient users of Pictello. I designed a system to make it simple for everyone to do this as we progressed through the initial stages of our project and it became apparent that we needed to create a structure for it to work.

Families, school staff and children were trained and supported to use the scripts daily. Therapy consisted of four to eight sessions depending upon progress and need. The bulk of the therapy sessions consisted of technology support, liaising with parents and school staff to give feedback about stories and to problem solve, and observing the stories being read by the children with others.

Pictello Setup

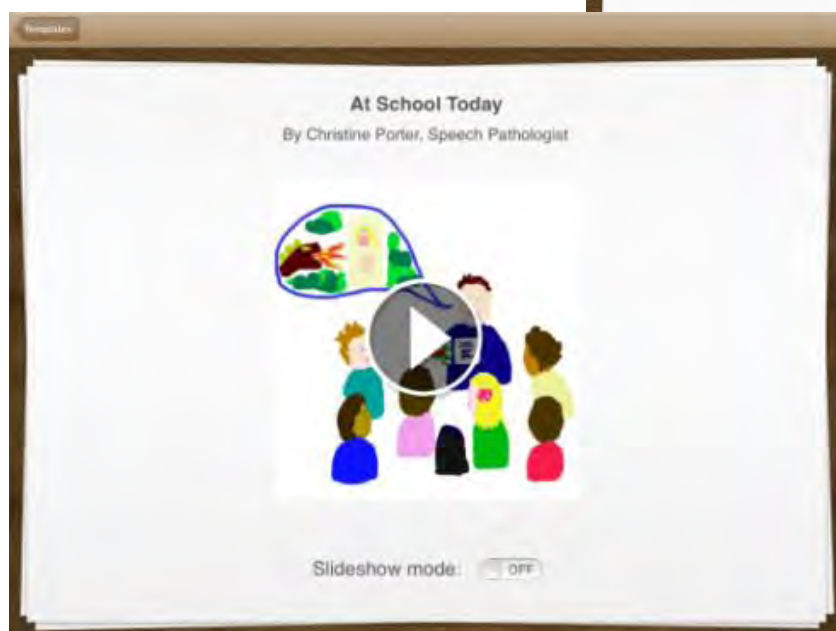
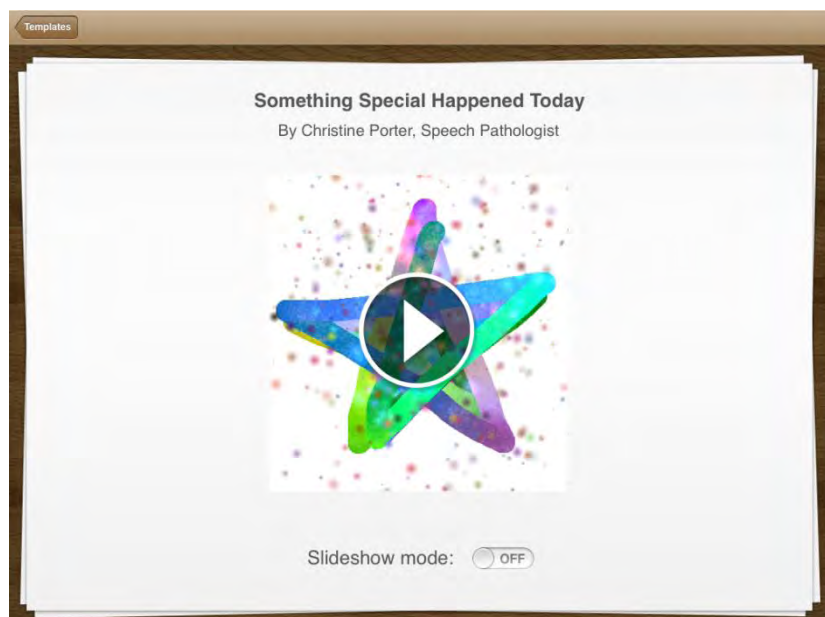


1. Folders: To make stories about daily routines simple to find

The stories were filed in folders so that the children, their school staff and their families could locate them quickly. The same conversational script templates were copied into each folder for each day and modified to suit that day. If there was no opportunity to change the story it didn't matter because the weekly routine was usually the same eg library happens each Monday so the story is still relevant if it hasn't been changed.



2. Story Templates: Easy to copy and edit

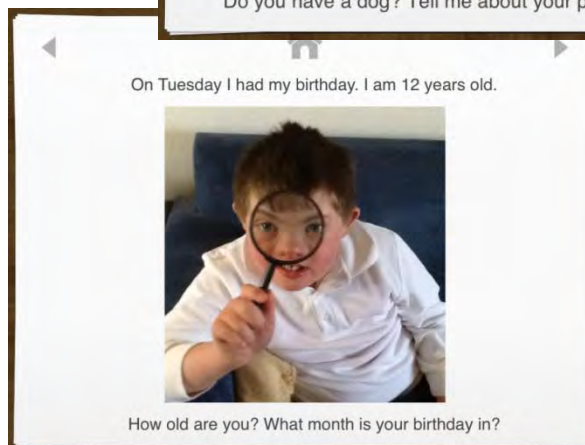
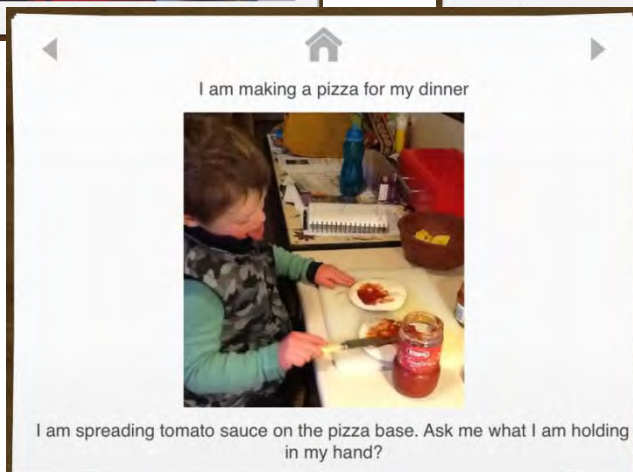
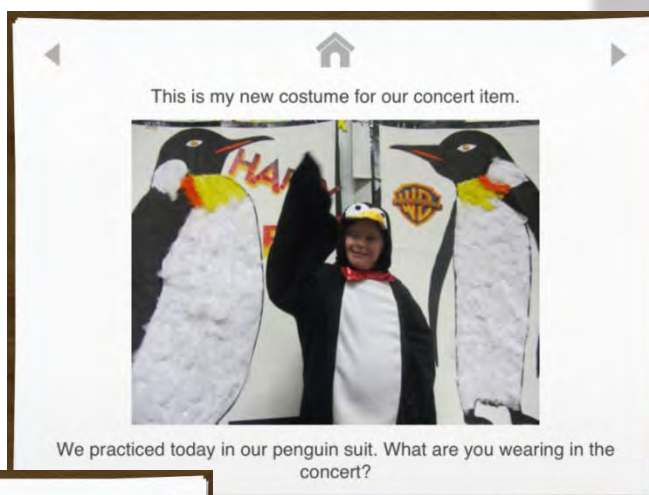


The templates file shared through iTunes to each iPad and customised for each child. A standard image was embedded into each page of the template and it was replaced with photos that were relevant to the child by the person making the story. Different synthesised voices were also downloaded in the “Voice Download Manager” under settings and changed to suit the child’s individual preferences and level of interest. “Little Creature” and “Bad Guy” were highly effective at getting people’s attention!



3. Creativity and personalisation was actively encouraged...

...and was taken up enthusiastically by parents and school staff. These are some page examples of the great stories that were created:





Our Results

Not only did it work, but it worked better than we had anticipated.

- **All** students experienced improvements in interaction skills in either or both home and school environments
- **Socially motivated** students demonstrated the greatest gains in interaction skills
- Students with **limited interest in social interaction** demonstrated less improvement
- **Most** participants demonstrated:
 - a marked increase in initiation of topics or interaction
 - a **higher variety** of communication functions (eg commenting, extending a topic)
 - a substantial increase in the effectiveness of their conversations
- **Most conversation partners** changed their communication behaviours, with a higher level of vocabulary and more turntaking
- **Some** students used their newly learned skills in spoken conversations without Pictello.

Students in an integrated setting were being approached by children in mainstream classes to ask about story content in the playground. This was reported by staff to never have occurred previously. A parent of one participant reported that her child was much easier to understand. He had now started talking in the car and even better, she could understand what he was saying. This parent reported that she found herself wishing he'd stop talking so much, and enjoyed the milestone that this marked for their family!

Our Feedback

Student: “KM”

- KM now had a means of participating in conversations with her friends in the playground
- KM was an engaged and an active participant in conversations instead of being sidelined
- Friends were programming or volunteering contributions to KM's scripts on Pictello
- KM's friends created a “No Adults Allowed” folder – a sure sign that it was valued by K and her friends

Families:

- The multi-media (pictures and speech) provided by Pictello gives more context resulting in increased sharing of content and topic maintenance with listeners
- Pictello enabled increased participation and initiation in conversations
- Communication attempts were more likely in different situations and with different people
- Pictello provided a platform for quality interaction with extended family members
- It was important to consider age-appropriateness of stories when interacting with a wider social network
- One parent reported that her child enjoyed using Pictello but was not motivated to use it for social interaction



Teachers:

- Pictello is easy to use and with more regular use and familiarity it can be embedded into many learning opportunities throughout the day
- “An excellent resource to complement and facilitate communication, develop relationships with peers and share information”.
- Pictello stories are relevant and motivating for the whole class, not just children with severe expressive language impairment
- “I was already familiar with the app but have learned so much more.”

Our Findings

Pictello stories:

- provide practise of the same conversation pattern with different people
- allow children to talk about something that isn’t “here and now”
- teach carers how to help children who are hard to understand have a successful conversation
- are quick and easy to write
- encourage regular and natural interaction
- script repetition with different topics and pictures provides the opportunity for learning

Pictello stories for conversations at school:

- are effective *only* with the support of parents, school staff and children
- work best with children who already show an interest in social interaction
- are simple to use and requires minimal effort
- are most effective at school when supported by the executive and whole staff
- support conversation best when used between home and school rather than just in one place
- are presented on a socially accepted, engaging and well-supported platform

iPads in Schools

These observations are based on our experiences with rolling out a structured program within the school context.

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none">• Flexibility• Attractiveness• Versatility• Portability• Cost• Access• Cross-curricular application• Resources• Access to support forums	<ul style="list-style-type: none">• Fragility• Size: Too big for playground, too small for news• iTunes phobia• Technophobia• Volume in crowds• Lack of logistical support for iTechnology and Bring Your Own Device• Not accepted for use in national examinations



Our Conclusions

- Pictello is a universally attractive digital storytelling app that can support students with severe expressive communication impairment with personalised, context-setting conversation scripts for successful interactions with an increased range of communication partners.
- With training, support and collaboration, families and teachers can generate unique scripts that are highly motivating for those with severe expressive communication impairment and effective in generating quality responses from conversation partners.
- Pictello should be considered as part of a student's multimodal communication (a range of systems and strategies, providing the student with a choice in different situations). Training of communication partners should include the concept of multimodal communication and reinforce the importance of avoiding focusing exclusively on technology and failing to respond to the student's other forms of communication.
- Digital storytelling provides a medium to embed technology into a student's daily routine by reporting what has happened at home or school.
- Conversation scripts are easily and efficiently shared and modified in Pictello.
- Pictello allows students to independently prompt both familiar and unfamiliar conversation partners.
- Pictello enables users to independently navigate between stories to maintain the interest of the conversation partner and therefore the length of the interaction.
- iPads are attractive, accessible and generic tools that appeal to both adults and children.

Limitations of our Research

- Small number of participants
- Motivation for communication for some participants
- Lack of consistency from some parents and/or school staff
- Variation in the intellectual, social and communication abilities of the participants made it hard to pick trends
- Lack of IT support and internet access in schools was a barrier to story sharing and updating
- Classroom-based data collection was inconsistent because of variations to routine

Our Future

The conversational story templates from our research project have been uploaded to the Pictello Sharing Server. The codes for these stories are as follows:

At School Today Conversational Template: `pictello://import_1461-4433`

On The Weekend Conversational Template: `pictello://import_8577-1629`

Something Special Happened Today Conversational Template:
`pictello://import_4154-6220`

In the future we hope to publish a research paper about this project.



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I gathered a whole pile of leaves then tossed them in the air!



What do you like to do with autumn leaves?