TECHNOLOGY IN THE PRESCHOOL CLASSROOM:

Why and How to Use It for Language Learning

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A COMPREHENSIVE GUIDE FOR PRESCHOOL EDUCATORS

FOREWORD

Dear Pre-school Educators,

We live in a day and age where technology is progressing rapidly, that it is impossible to ignore its impact on our daily lives. Technology is such a powerful tool, but we often dismiss its use as a positive learning instrument for our youngest learners. It is no longer a question of "if" technology were to be implemented, but rather "how" and "why" it should be done.

As we prepare today's young learners for tomorrow's world, we should acknowledge that knowing how to use technology has become a necessary skill. Our children are developing what is known as "multiple literacies" – where they are no longer adept with just print material, but also technology.

I hope this booklet can provide you with the necessary information on the implementation of technology in the classroom to aid language and literacy learning.

Sincerely,
Jamie Lai

A puzzle in this booklet denotes a fun activity!

WHAT ARE SOME THINGS TO CONSIDER BEFORE IMPLEMENTING TECHNOLOGY IN THE CLASSROOM?

equity

It is important to understand that children come from diverse home backgrounds and different socioeconomic levels. Not every child in the classroom has received exposure to technology. The school must be able to provide opportunities of access to technological devices regardless of children's background [3]. Teachers should be trained in specific skills and have adequate technical support to provide a holistic learning experience for children [5]. Understanding each child's needs and learning pace prior to implementation would be beneficial as well.

enhancement

While technology can be a positive learning tool, it is good to bear in mind that technology should **complement**, not replace, real-life activities and interaction, such as outdoor play and arts and crafts. Children learn best through concrete and sensory experiences with people, things, and the environment [14]. Children are still young and lack the relevant abilities to handle technology on their own. As teachers, there exists a crucial role of facilitating children in their device use alongside interaction in the classroom to maximize their learning.

extent

Both the Health Promotion Board (HPB) and Media Literacy Council (MLC) have proposed that children's exposure to technology should be limited to only **1-2 hours per day**. It is important to ensure that children are engaging in appropriate and desirable content. Healthy viewing habits, such as taking breaks after 30 minutes of device use and participating in outdoor activities, should be cultivated. Games on devices should be incorporated sparingly, as these can be a distractor to the learning tasks at hand [15].

WHAT ASPECTS OF LANGUAGE AND LITERACY LEARNING CAN BENEFIT FROM TECHNOLOGY USE?

VOCABULARY LEARNING

Without sufficient vocabulary, children are unable to express their own ideas or understand others [9]. Technology can help children learn new words in a fun and engaging way by introducing software that draws associations between pictures, written and spoken words. For older children, electronic books also offer opportunities to learn new words by offering definitions and related words, all of which pave the way for developing basic language skills.

PHONOLOGICAL AWARENESS

Phonological awareness refers to **the understanding of the sound structure** (rhymes and syllables) **of spoken language**.

Touch-interactive technology that reads and sounds out specific word components can help children distinguish different sounds. This is an important building block to developing reading abilities [12]. Using a stylus can help children understand the idea that words have a start and end and are made up of segments. By constantly hearing the language, children can pick up the appropriate word structures and learn to form correct sentences.

READING AND WRITING

Reading helps children develop skills such as recognizing letters, sounds and words that serve in text comprehension. Through writing, children learn to convey meanings and communicate with others. By exposing children to electronic books, the visual attractiveness not only helps children recognize words better, but also motivates them to read more [6].

Writing is also linked to reading. Interactions with technology can sharpen operational motor skills (through basic clicking and tapping) and hand-eye coordination to help them with their use of writing tools. Writing on technological platforms can also encourage enthusiasm and this may be especially useful for children with learning disabilities [10].

CONVERSATIONAL SKILLS

The ability to converse with another person is an important language and social skill that should be developed from young. This includes learning to construct questions and answers, listen for understanding and pause appropriately.

Speech-recognition technology such as robots give children a chance to interact with the machine through self-paced interactions in a safe environment. Social robots (Pepper and NAO) can listen and talk to preschoolers, enhancing their conversational skills through imaginative play [7] and creative thinking.

WHAT ARE SOME KEY FEATURES OF TECHNOLOGIES THAT MAKE IT USEFUL FOR LEARNING?

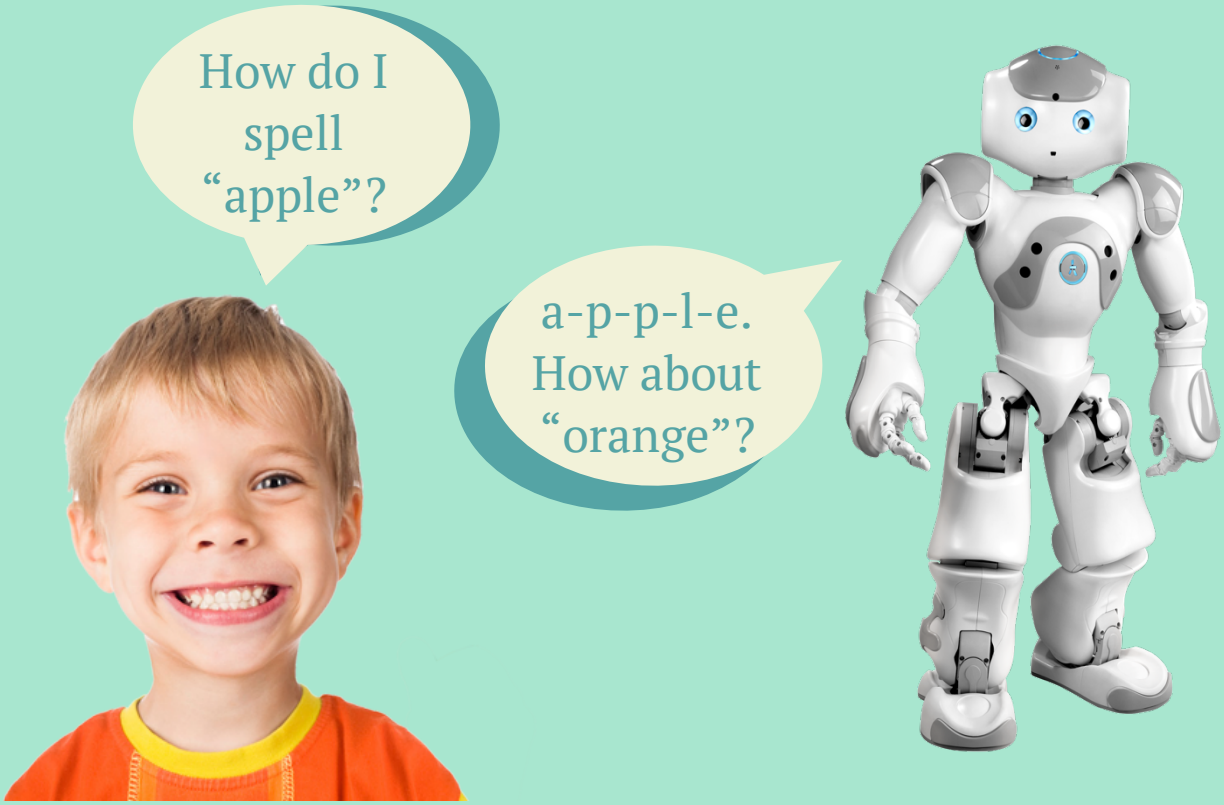
interactivity, in moderation

In the case of e-books, this is the key feature that distinguishes traditional and digital storytelling. The latter involves a whole bunch of interactive features, such as additional sound effects, extensive games and animated images that create a more holistic experience when telling a story. However, excessive interactive elements may be overwhelming for the young learner and distract him/her from the contents of the actual story itself [15]. This makes the learning experience passive, hindering the child's comprehension [13] of the story.

It is also important that animation features are specific and relevant to the content being taught. An animation of a gliding plane with accompanying engine sounds is much more effective when learning the new word "aeroplane", rather than reading a story about vehicles.

responsiveness

An ideal technology medium should be able to reciprocate responses from a child. For example, social robots would only be useful to a child's learning if they are able to reply and interact with the child, as opposed to merely giving instructions or commands. It is important that responses from both parties are vocalized to mimic the reality of conversations. Such open-endedness of particular apps, games or e-books can enhance creativity and exploration, as compared to static pictures on print.



user-centric

Studies have suggested that technology allowing for decisions to be made empowers children and caters to their individual needs [1][2]. For young children who learn at a slower pace, the story can be narrated to them while others can do without the narration. Also, even with very basic levels of literacy [8] and limited vocabulary, children can still create stories with digital technologies.

HOW CAN WE USE TECHNOLOGY IN A "DEVELOPMENTALLY APPROPRIATE" WAY?

It is important to remember that technology should never replace hands-on experiences. Even though the use of technological devices tends to be a shared activity among pairs or groups, this does not make children any more participative and they usually remain passive communicators [11]. Children learn best through quality interactions. Hence, your role as an educator remains equally, if not more important, to mediate and guide interaction in the presence of technological devices in the classroom.

Communication and interaction with children can occur in many different forms. Talking is a key medium of interaction, but more importantly, eye contact, gestures and touch are also powerful forms of non-verbal communication. When using technological devices, it would be useful to point out things on the screen and maneuver the mouse together with the child by placing your hand over his.

In addition, while retaining hands-on activities, technology can supplement children's learning in several ways. Digital resources can also be used to introduce a new topic or as a stimulus for group discussions.

We all know how difficult it is to cultivate an interest in their Mother Tongue. Hence, getting kids involved with the multi-sensory (audiovisual) dimensions of technology would be especially supportive for our young learners in terms of Mother Tongue learning. Mother Tongue educators can consider incorporating technology into their lessons to make learning fun and relevant.

RHYME IT UP!

Create a class chart of rhyming words through photos taken around the school by the students. For example, children can take pictures of a ‘cat’ and ‘hat’. This activity develops phonological awareness.

As an extension, teachers can print double copies of each photo and transform it into a picture memory game to improve word recognition.

cat
hat

READY, SET, DANCE!

Show an interactive song and dance video on the Chinese nursery rhyme “Pulling Up A Radish” (拔萝卜) to the children. After learning the lyrics and simple actions, encourage them to be innovative by exploring other variants (i.e. heavy fruits such as watermelon) and change the lyrics to create their own song. Get them to video-record one another performing their own songs about different fruits and vegetables.

HOW CAN WE REASSURE PARENTS THAT TECHNOLOGY IS SAFE AND BENEFICIAL TO THEIR CHILD'S LEARNING?

Getting parents on board the "technology-in-the-classroom" bandwagon can be a challenge since many parents have expressed doubts and concerns over its use. With this 3-pronged approach, parents should feel less worried about this breakthrough into modern-day learning.

emphasise skills

Instead of just telling parents generic and short-term benefits that technology can bring i.e. better word learning and comprehension skills, focus on the long-term skillsets their children can acquire and keep with them for life. Starting young allows their child to develop "school readiness" [4] and prepare them for a technology-literate world. Interactions with digital technology can develop a valuable set of 21st century skills such as problem-solving, communication and collaboration with others.

educate ahead

When you plan to incorporate a certain form of technology or device into the classroom, let them know in advance. Be clear and transparent about how and why you decided to use technology for a particular activity. Parents appreciate honesty and will be more receptive towards the implementation. It is recommended to start off slow and build up the momentum. For a start, a monthly Show-and-Tell activity could involve peer-to-peer recording with a video camera. As parents gradually become more accustomed to technology use, weekly storytelling sessions could involve e-books and mobile applications.

encourage collaboration

The best perks of technology can only be experienced when both teachers and parents are involved. Parents can also be encouraged to talk to their children about their day's experiences with technology. If the child used the Bee-Bot [7] in class for the first time today, questions like "How did you use the Bee-Bot?" "What did you like about it?" are good conversational starters and reinforces the value of learning through technology.

ANIMAL ADVENTURES

Get both the children and their parents on board by creating a **shared e-book** about the children's favourite animals. With the help of parents, children can upload short write-ups, photographs and e-drawings via a mobile application.

Emphasize that it is about the process of putting the book together, rather than the final product itself. You can also encourage parents to take the children out to farms during the weekends and have these moments documented into the e-book.

CONCLUDING REMARKS

Technology can be a great aid to children's language learning when used appropriately and in moderation. However, it should never replace quality face-to-face interaction, be it through imaginative play or hands-on activities. Parents can also guide their children to be adept yet healthy users of technology.

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