Facilitating Language Development with Media For My Special Child

A Guide For Parents: Language Development of Young Children with Autism Through Media Exposure

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While it is widely known that typically developing children engage in language learning through meaningful interaction and thrive in social environments [21], children with autism are special and operate on a different mechanism. As a result, these children tend to experience delays in language acquisition which, if left untreated, could be detrimental to their communicative capacities in the future [27]. However, over the years, studies have found that alternative materials can be introduced to enhance the language learning of these children. For instance, it was reported that picture-based interventions involving materials such as picture cards can facilitate communication in children with autism[10].

The digital age centers the lives of nearly everyone whereby social media has become one of our most preferred activities. In this aspect, many of us fail to realize that our special children too, are no different! Constantly surrounded by media and digital devices, special children also take notice and model our behavior [5]. The constant advancement of technology has proven to be an asset in administering innovative platforms for learning. Recent years have seen the introduction of iPads to a multitude of learning environments for both typically and atypically developing children. The future for technology-mediated learning seems to be promising as multiple studies have found that technology can be stimulating and motivating for children with autism [22]. Hence, despite the concerns regarding media exposure among families raising children with autism, the following information would hopefully allay your reservations and fears of introducing technological instruments for teaching language. For the purpose of this booklet, “media” and “online program” encompass electronic screen-based and video based media.
Reasons why media helps to facilitate language learning

1. Media devices and programs can foster comfortable learning

Children with autism suffer impairments in the domain of social-cognition which results in difficulties in navigating through social interactions [16]. The self-contained nature of utilizing iPads could foster a more comfortable platform which could also prove to be optimal to their learning. Taking their sensory sensitivities into account, the directed attention coupled with the structured characteristics of the platform and selective responses they receive (e.g. for selecting the correct response) can also reinforce their learning while protecting them from excessive sensory inputs that may trigger meltdowns and anxiety [19] [25].

2. Media offers rich visuals that facilitate learning

Today, media is easily accessible and is involved in almost every facet of our lives whereby rich visual images and apps are always readily available. According to Temple [26], most people with autism are visual thinkers whereby pictures are their first language while words are their second language. For that reason, pictures are one of the most effective materials for teaching as the graphics are able to capture and maintain their attention [1]. As such, readily accessible visual information that can be offered by devices such as the iPads can help to process information better.
A study found that the Picture Exchange Communication System (PECS), a picture-based method to teaching language was beneficial to developing communication skills in children with autism who were not verbally proficient [10].

In addition, in a recent study that taught children to pair novel words to coloured and non-coloured pictures, it was found that the children were more likely to label the coloured pictures more successfully as compared to non-coloured pictures [13]. This is because the greater the resemblance the digital image bears to the real-life referent or object, the better the child is able to comprehend and remember it. Therefore, the vibrant visual stimuli that media platforms offer can be advantageous to language learning, in helping the child associate objects with labels as well as expand their vocabulary.

3. Media is more engaging than traditional platforms

When it comes to the highly captivating graphics of iPads as well as their interactive and stimulating nature, it was found that children with autism have a greater preference for the trending touch screen platforms as opposed to the traditional methods involving paper material [17]. In a recent study by Kemp [15], two children with autism were observed to exhibit better engagement with iPad apps than with picture books. Similarly, a study that compared the learning outcomes of the traditional PECS (i.e. paper version) and the version on the iPad found that though Both were equally effective, a majority of the children indicated a preference for the iPad version. Evidently, this finding should not come across as a surprise given that even adults and other typically developing children would be more drawn to the iPad’s interactive charm and novelty as compared to the traditional and unresponsive paper materials.

Furthermore, it appears that the prominent engaging feature of the iPad also provides children with the motivation to pay more attention to the task at hand whereby more task-directed behaviour is observed [28].
This suggests that the effects of such exposure could also spill over to enhancing cognitive abilities whereby the ability to stay more attuned to goal-directed activities could help develop executive function through the practice of inhibiting impulses and sustaining one's attention [23].

Executive function refers to cognitive skills that enables one to provide responses to a task [24]. These skills include processes such as attention shifting, inhibition, update in working memory, language processing and speech production.

Hence, a child’s motivation or preference to engage with learning material should not be overlooked as it directly impacts knowledge acquisition [8]. Motivation could increase the likelihood that he or she would utilize the app thereby, eliciting greater communication and learning. Given the highly engaging nature of the iPad, research has also found that it could reduce challenging behaviour during interventions provided by parents [9] [35].

4. It has features that encourage vocabulary development through multisensory interaction

The acquisition of vocabulary is salient to language competency as it determines the proficiency of one’s reading comprehension and oral communication skills [11] [33]. According to recent studies, vocabulary knowledge is also associated with reading and overall success in school [29]. This highlights the need for children with autism to strengthen their vocabulary knowledge.

The use of media-based instruction to develop vocabulary knowledge is increasingly prevalent with children with special needs [3]. While it cannot replace all learning experiences, it is able to provide sensorimotor experiences by introducing touch-screen features such as touching, gesturing and pointing [34]. Therefore, apps designed to promote learning are able enhance these forms of sensory interaction to a larger extent as compared to the other traditional print mediums.
The increased usage of media platforms can also be based on the incentives of automated practice and feedback that online programs can provide. Furthermore, media offers the access to multiple sources of information such as sound and images that can facilitate word learning [6]. For instance, integration of visual images of the vocabulary and text accompanied by the definition and sound of the vocabulary can aid in learning and memory [4].

Instead of just listening to disembodied voices, visual imagery of talking faces made possible by media can also facilitate speech distinction in vocabulary learning. Through the combination of visual speech and complementary audio, the child would be able to receive two mutually supporting sources of information that can further enhance learning [4]. For example, /ba/ and /da/ can be easily discriminated visually but may not as easily discriminated through listening. On the other hand, /ba/ and /pa/ can be easily differentiated when listening but may be difficult to distinguish visually.

The benefit of vocabulary learning with the aid of media was further substantiated by a recent study which found that not only were children able to acquire new vocabulary, they were also successful in generalizing the same words across other similar pictures in different spatial locations [4]. Thus, the combination of two modalities (visual and speech) through seeing a face and listening to language enabled better language learning than when each modality was presented alone as children were able to transfer what was learnt in a natural environment successfully.

3. Media can be used to support learning through scaffolding

Scaffolding is defined as the rendering of assistance to learners according to a needs basis in order to aid them in completing tasks or acquiring skills that they cannot accomplish independently [31]. For instance, in the event the child encounters difficulty in accomplishing a task on a media platform, visual and verbal prompts can be provided to simplify it and facilitate learning. As such, more support is provided with the presentation of a new task but the extent of support given is gradually reduced with increased competence. According to researchers, scaffolding can be effective in supporting learning across different ranges of age and learning abilities [32]. For that reason, scaffolding can be advantageous to your child’s learning as it can decrease errors made on tasks and establish more robust learning [30].
Ways you can support the learning process

Be there during the learning process!

It is imperative that parents are there to supervise and facilitate throughout the learning process. One of the greatest concerns parents have with the integration of media to learning is that their child would be less motivated to engage in social interactions given that the calm and isolated nature of iPads would be more appealing to children with autism. However, adults can act as great facilitators to learning as means of preventing such instances from occurring.

While technology is introduced to facilitate language learning, it also serves as a mediating platform to encourage social interaction. As parents, your presence in the learning process can also affect the quantity and quality of your child’s learning. Bearing in mind that though the educational apps or programs provide the content for learning, your responses to your child’s progress can also be beneficial to his or her learning as it helps to integrate the social nature of communication which technological devices cannot provide. Therefore, it is of paramount importance that media be used as a tool to facilitate learning to bridge the acquisition of language with its use for social communication rather than as an absolute replacement for education.
Interact with your child during the learning process!

According to researchers, parents should ask more questions and provide lesser comments during the learning process [14]. Questions can be used to help elaborate on learning material and expand on the child’s learning. Thus, not only does it encourage social interaction, doing so can also enable you to ensure that your child is able to comprehend the teaching materials. Though questions can be beneficial to the learning process, in the case of children with autism, asking too many questions can also prevent them from initiating spontaneous speech and interaction. For that reason, children should also be provided with the freedom to initiate interactions as it seems to be beneficial in encouraging them to elicit spontaneous social contact [20] Additionally, social interaction during learning can also aid in the development of social skills as it was found that during interactions, the behaviours of children with autism had a tendency of being characterized by behaviours of the adults such as smiling and exhibiting playfulness [20].

Useful Programs

Different programs cater to different needs and age groups whereby some of which cater to more than one areas of development. The following are some websites that can guide you in identifying the appropriate programs for your child:

- Autism Apps
  https://www.autismspeaks.org/autism-apps

- Autism Apps
  https://autismapps.wikispaces.com/

- Smart Apps for Special Needs
  http://www.smartappsforspecialneeds.com/

- Apps for Children with Special Needs
  http://a4cwsn.com/
Addressing Your Concerns

**How should I introduce media to learning?**

The decision of how to introduce technology to your child’s learning should be based on a detailed plan designed by the family as well as medical professionals whereby it should cater to your child’s personal characteristics and communication needs. In order to ensure that the best strategy is implemented and prior to assessing an individual for a digital device or online program, factors such as usability, cognitive and sensory demands as well as technology compatibility have to be taken into account. Along with the specific goals aimed for your child, his or her strengths should also be taken into consideration in order to match these aspects to the best program available.

**When should I introduce media to learning?**

The diagnosis for autism is typically reliably made between the age of 2 and 3 years whereby interventions would follow right after [2]. Given that interventions are likely to be more effective upon being initiated at an earlier age, it would be ideal if learning language with media is introduced as soon as possible. However, the timeline of the intervention should also be discussed with medical professionals who are familiar with your child’s development.
In the technologically advanced society we live in today, there are apps for practically everything. Whilst some research has suggested that boys with autism have a greater risk of developing video game addiction [18], there is no evidence suggesting that children with autism have a higher likelihood of developing addiction when exposed to educational programs with the supervision of an adult.

That being said, the need to practice caution in the utility of these apps should not be downplayed. In order to ensure optimal learning, it is wise to establish a reasonable duration whereby your child will be exposed to media (e.g. 60 to 90 minutes). Use a timer to monitor how long he or she is engaged and set a time limit you deem would be sufficient to his or her learning. Seeing as to how you are also encouraged to be present during the time of learning, this would also prevent your child from being completely isolated and immersed in the digital platform.

Additionally, although many parents have been increasingly resorting to digital devices to pacify their children, it is salient for parents of children with autism to prevent from doing so. Leaving your child with the device unattended over an extended period of time may increase the risk of your child exhibiting social withdrawal behaviours and developing a reliance on the device. Hence, should the device be utilised for other leisurely purposes, it would also be best if your child receives the supervision of a caregiver.
Will the use of media impede my child’s social interaction with others?

Though research shows that exposure to media can promote communication in individuals with autism [7], the goal of learning with the aid of media should always be about communication and language acquisition and not about the device. If anything, focus on language development would only result in your child’s increased interaction with his or her peers. This is based on the finding that individuals with autism who have high language skills would interact more frequently with their peers as compared to those with low language skills [12]. As such, as mentioned above, it is strongly encouraged that a caregiver be present during the learning process to facilitate the learning of your child by integrating the content shown on media into verbal communication and encouraging social contact.

Are there long-term side effects for the prolonged use of digital devices for learning?

Presently, there is little to no research mentioning the side effects of long-term exposure to media for education purposes. Nevertheless, you should practice due caution by exercising moderation in your child’s exposure.
Raising a child with autism comes with a myriad of challenges that is unique to every child. Hence, a tremendous amount of patience, resilience and determination is required with every step of a child’s development. As such, it is important for parents to remember that every child is different. What works for one child may not necessarily work for another. Therefore, do not be disheartened if your child does not respond or shows no interest in a particular intervention program. Discuss and formulate a program with the aid of medical professionals who are well-versed in your child’s developmental milestones as well as personal characteristics. Indeed, you would probably have to go through some trial and error before being able to establish a program suitable for your child. Thus, in times of difficulty, take comfort in the fact that the better the program is designed to cater to your child’s developmental needs, the higher the likelihood that he or she would show significant improvements.

Lastly, this booklet may not provide caregivers with all the required details. Hence, should you require any further clarifications, please seek the assistance from the appropriate medical professionals.
References

References
