



Children and adults with an Intellectual/ & Developmental disability often require support in completing daily living activity. Helping individuals to acquire these skills are critical to their success and to live independently at adults.

avail® is an Mobile, Educational and Healthcare solution that utilizes the principles of Applied Behavior Analysis (ABA), Video Modeling and other prompting approaches. Providing a research based personalised programme at the fingertips of individuals with disabilities, parents, educators, and support staff across the globe.

avail® has been developed from research and professional experience in teaching independent skills. Below are a number of research papers and links that encompass elements featured within the avail system.

Applied Behavioral Analysis

Behavior analysis focuses on the principles that explain how learning takes place. As a whole, ABA has the best documented outcome data supporting their approach as compared with other methods”. (Jacobson, J.W.2000).

avail utilises key strategies within the ABA, specifically, task analysis, chaining, prompt-fading and positive reinforcement.

Prompts

Prompts are often define as “artificial” stimuli that are presented immediately before or after the stimuli that will eventually cue the learner to display the targeted behavior at the appropriate time or circumstance.

Prompts can be “instructions, gestures, demonstrations, touch or other things that we arrange or do” to increase the likelihood that individuals will make the right response (McClannahan &Krantz, 1999).

Video Modeling

Video Modeling derives from the work of Albert Bandura and his concept of social learning theory (Bellini & Akullian, 2007 ;Bellini, S., & Akullian, J. (2007). He stated that children learn many skills by watching other people perform the skills and then imitating the behaviors. As early as the 1960s, Bandura suggested that watching televised models was intrinsically motivating and had a strong ability to hold one’s attention. He found that new behaviors could be learned from televised models whether or not extra incentives were provided.

In the past, bulky camcorders, VCRs, and televisions were needed to produce and playback videos. Now with advances in technology this is available using smart devices.

(Sourced

from

Visual support

Picture based supports are often used to create picture schedules to create understand of a person's daily events and improving on-task behavior (Bryan & Gast, 2000 ; Spriggs, Gast, & Ayers,2007)



Pictures, can be used as a means of prompting children to initiate and completes tasks. Such prompting systems, use pictures to depict a step in a chained response task analysis, shows a finished product or the finished location. Using pictures as a reference has been found to aid students to complete difficult tasks such as assembling furniture.([https://www.researchgate.net/publication/21529816 Effects of Picture Referencing on PVC chair Love Seat and Sette Assemblies by Students with Mental Retardation](https://www.researchgate.net/publication/21529816_Effects_of_Picture_Referencing_on_PVC_chair_Love_Seat_and_Sette_Assemblies_by_Students_with_Mental_Retardation)). Picture schedules have been documented as beneficial within a working environment for people with intellectual disabilities (Carson, Gast & Ayres 2008). The use of visual supports can also aid students with ASD to be incorporated in “an inclusion model”. (<http://ir.library.louisville.edu/cgi/viewcontent.cgi?article=1170&context=etd>)

Audio/ Verbal prompts

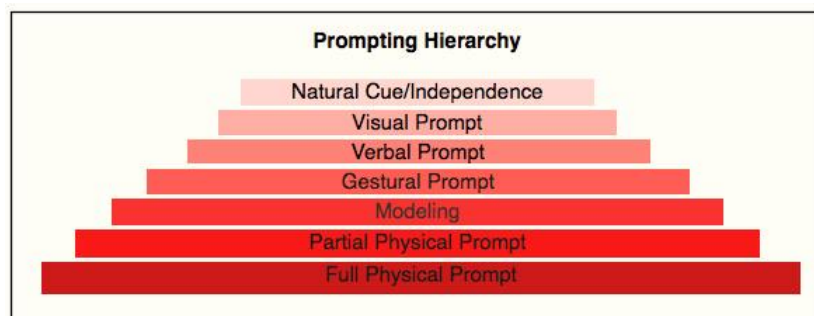
A review of 268 Applied Behavior Analysis journal articles identified that verbal prompts are the most commonly reported auxiliary cues (G.S.MacDuff, 1999). This verbal prompts, can also be delivered through technology. One study noted how students would listen to pre-recorded instructions on tapes and complete steps that corresponding to steps of a task analysis. Two study's noted the audio prompts effectively cued students to continue working and completing employment related tasks (Briggst et al., 1990; Davis, Brady, Williams, & Burta, 1992). This use of audio prompting on a mobile device was further documented as an aid by Davies, Stock, & Wehmeyer (2002).

Fading prompts:

While the above teaching strategies focus on creating prompts, a key element is the process of fading back prompts. When creating a prompting aid, we must envision how we can fade out the prompt or reach a level whereby the individual is using the least amount of prompts possible.

Prompt fading is defined as the systematic reduction of a prompt until it is eliminated or redefined as an integrated part of the task, promotes generalisation and maintenance of skills. Most-to-least prompting is a common prompt fading procedure used to master new skills. This involved the learner receive whatever prompt they need to successfully perform a new skill when instructions begins (Cooper,1987a). Over success teaching, repetition and assessment the amount of assistance is gradually reduced until no prompts are provided.

In order to reduce prompts, an assessment must be completed to note if learning has occurred. *avail* has a built in guide, that enables assessments and then assists in reducing prompts using Prompting Hierarchy guidelines.



Use of technology in teaching:

The innovation of iPads and smart devices have provided new opportunities for learning and communication for individuals with disabilities. Smart devices are more accessible than a traditional PC or laptops, and the individuals enjoy its predictable responses and engaging apps.

It has been identified that individuals with Intellectual Disabilities and ASD can not only achieve significant skill acquisition when taught using mobile technologies, but may also rather instruction delivered through a mobile device (Shane & Albert, **2008**).

This was also supported by Gentry, Wallace, Kvarfodt, and Lynch (2010), they suggested that students demonstrated statistically significant improvement and increased satisfaction in performing daily skills when using the iPods. They also found that students with ASD were easily able to learn using these devices.

Comparison to live Modeling (adult directed/1:1 Modeling):

Adult directed live modeling is a commonly use teaching approach to show a child how to complete a task or behavior, where the adult would demonstrated the desired behavior and allow the child to repeat.

Charlop-Christy, Le, and Freeman (2000) found that video modeling resulted in quicker rates of skill acquisition and increased generalization as compared to live modeling. Video modeling also appears to be a more efficient method for teaching skills as it requires less time and training to implement (Graetz, Mastropiera & Scruggs, 2006).

Creating independence:

The avail revolutionary software allows parents to monitor from a distance by receiving notifications when tasks are viewed. This empowers the individual to confidently self-manage their daily events independently, while the parent can security monitor from a distance. A key element of avail i.e. video modeling, has been found to successfully teach independence via community skills such as purchasing among a group of students: Alcantra, P.R. (1994), Haring, T.G., Kennedy, C.H., Adams, M. J., & Pitts-Conway, V. (1987).

Independence has been observed to be achieved through the use of a video-prompting procedure on an iPod to help instruct a young man with developmental disabilities to complete vocational tasks in a competitive work setting (Van Laarhoven et al, 2009). It is important to keep in mind the various areas in an individual's life that may benefit from such achievements.

Furthermore, a combination of prompts such as pictorial, auditory and video prompts has been identified as achieving success in relation to increasing independent skills such as cooking among students with ASD (<http://link.springer.com/article/10.1007%2Fs10803-009-0761-0>). This is extremely relative to avail as it provides the ability to use a single method or combination method of prompts to adapt to the individual's ability or desires whilst learning an independent goal.

While the above research supports the strategies used in avail®, it is necessary to conduct research on the effectiveness of avail® as a prompting system, that achieved and measures learning. This is currently being explored by the Irish Research Council, Marie Curie Assisted Technology programme and we welcome any other studies who wish to conduct similar research.

Kind Regards,

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