

# AutisMate App Evaluation

## from a Behavior Analytic Point of View

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There is a plethora of iPad applications (apps) geared toward kids with special needs available to consumers today. Parenting.com listed the AutisMate app from SpecialNeedsWare as one of the 14 Expert-Recommended iPad Autism Apps (Tahnk, n.d.). According to Parenting.com:

“In the past few years, there has been an explosion in the number of mobile apps for kids with autism. Numerous studies have shown the iPad’s impact as a supplement to specialized therapy when it comes to learning and communication for kids with autism. Still, there is no silver bullet solution when it comes to apps, and each child will benefit from different apps for different reasons.” (Tahnk, n.d.).

It is the responsibility of a behavior analyst to ensure that whichever treatments or interventions are used with clients are research-based. This obligation extends to iPad apps that are used in treatment. In addition to referencing empirical studies that evaluate the efficacy of a particular app, behavior analysts are encouraged to take data on the effectiveness of the app with a particular client to determine if it is working for that client. Currently, there are no empirical studies published in the Journal of Applied Behavior Analysis (JABA) evaluating the efficacy of the AutisMate app. However, features that are included in the AutisMate app are research-based including video modeling and activity schedules. Many studies have shown that video modeling is an effective way to teach skills to children with autism spectrum disorders (ASD) (Charlop & Milstein, 1989; Delano, 2007). Research has shown that video modeling can produce rapid acquisition as well as greater generalization as compared to in vivo (i.e. real life) training (Charlop-Christy, Le, & Freeman, 2000). There is also research to support the use of activity schedules as common and effective teaching tools in the field of autism (Koyama & Wang, 2011). AutisMate combines video modeling with direct instruction as well as visual prompts in the form of an activity schedule, all in one app.

I interviewed several direct-care therapists and several Board Certified Behavior Analysts (BCBAs) at Including Kids, Inc., a clinic for children and young adults with autism and other developmental delays in Houston, Texas. I asked them about their experiences with the AutisMate app and about how they were using the app with their current clients. The main reasons they cited for their decision to use the app with their clients were to increase independence and to increase their ability to communicate in the community.

In addition to the traditional grid format that is used in many augmentative communication devices, AutisMate includes an alternative format in the form of scenes. Clients communicate with others by touching items in a scene of a room or area which is then said aloud by the AutisMate app. In the traditional grid format, users must learn to navigate through various folders in order to find the words they want and to build sentences. For many users, this format works. For some users, navigating through folders to find items is not a skill they learn quickly. Some users also struggle with associating visual representations of items with the actual item in the environment. With the scenes format, the user can touch the item in the scene of the room they are in without having to navigate through folders. The scenes are also highly customizable. For example, you are able to take a picture of the child's bedroom and then create hotspots around the room for various items they may need to communicate about. The GPS feature in AutisMate 365 also allows for the app to automatically change the scene selections based on the user's current location. For many clients at Including Kids, the scenes format has been beneficial for communication. One direct care therapist said that she used the scenes for communication in a new community setting for a client who had the ability to use the grid, because the scene format was easier and helped to decrease anxiety for the client in that setting. Several supervising behavior analysts at Including Kids said that, in addition to the scenes format, the other biggest reason they chose AutisMate as their client's communication app was that it has many other useful features besides augmentative communication.

Several of the BCBA's agreed that their favorite feature of the app was the activity schedule feature. Within an activity schedule, you have the ability to embed video models, verbal prompting, and timers. Several students at the clinic use AutisMate when completing their chores and when addressing personal hygiene skills. Once opened, the activity schedule will tell them the task (i.e. "squeeze toothpaste on the brush") followed by a video model of either a peer or a therapist performing the task. Once they complete the step, they can touch the picture to check off that part of the task. The next task and video model will immediately follow. For steps such as brushing for 2 minutes, a visual timer is embedded that shows the client for how long they must brush. The activity schedules, just like the scenes, are highly customizable. You have the option of embedding verbal instructions, video models, timers, and visual prompts or picking and choosing which of these features to include. One direct-care therapist used every feature when creating an activity schedule for a client and then faded out each feature until the client could perform the task independently. In the field of special needs, it is of paramount importance to teach independence with daily living skills to each client. AutisMate allows for different modes of prompting (visual, auditory, video, textual, etc.) without an adult needing to be present.

Clients at Including Kids are using the AutisMate app to gain independence in a wide variety of areas. AutisMate is being used in the clinic setting, in the home setting, and in the community. For

younger children, AutisMate is their voice when they need to communicate. For school-aged children, AutisMate shows them how to complete a daily routine such as packing and unpacking their backpack. For young adults, AutisMate prompts them to proper exercising skills when they are at the local YMCA. Here are just some of the skills AutisMate is being used to teach at Including Kids:

- Communication through grid and scenes format
- Brushing teeth
- Brushing hair
- Feminine hygiene skills
- Pack/unpack backpack
- Chores: vacuuming, taking out trash, wiping down tables, sweeping/mopping, cleaning windows
- Playing Hide and Seek
- Creating a grocery list
- Shopping for groceries
- Work schedule at a job site
- Addition skills
- Exercise routines
- Making choices and ordering at restaurants
- Finding videos to watch on Youtube.com
- Playing appropriately at center time
- Showering
- Leisure skills: listening to music, completing puzzles, watching movies, playing games, accessing iPad apps

AutisMate is also being used to teach some unique skills as well. One student is learning to perform a web search using AutisMate's activity schedule feature. Another student uses AutisMate to complete calming strategies and to review behavior expectations in the community. Several young adult clients are using AutisMate to learn vocational skills such as assembling items, sorting and stocking shelves. Others are using AutisMate to cook and follow recipes. The possibilities seem endless. Jennifer Dantzler, the Executive Director at Including Kids, Inc., had many ideas for ways to expand the clinic's current use of the app including targeting social skills, interactions with peers, classroom participation, safety skills, and navigating public transportation. Kristen Vaughn, the Program Director, plans on increasing the number of clients using the app in the next program year as well as teaching self-awareness through the use of AutisMate. In school-based settings, the BCBA's intend on using the scenes function in the app to teach campus navigation (i.e. finding the nurse's office). Cindy Brothers, the Clinical Director, would like to focus on using AutisMate to support executive functioning skills such as planning.

While it is clear that AutisMate can be used to teach countless skill areas, there is the question of feasibility and ease of use. When direct-care therapists were asked if they preferred AutisMate

over traditional methods of communication and activity schedules (i.e. picture cards, Velcro, binders, etc.) their answer was “Absolutely!” One therapist said that creating these materials on AutisMate takes “a lot less time” and that it has the added benefit of being able to be customized to the student instead of having to use generic pictures and videos. “You can take pictures of the actual kids and video them completing the task,” said one therapist. “It is user-friendly...if you want to create [something], you can do it immediately,” said Brothers. The scene feature is also quite unique in that it is a multi-purpose tool that can be used for communication, choice making, completing a task, and navigation. You can embed visual prompts, videos, timers, and folders within each scene. When asked which was her favorite feature, Dantzler replied “The scene-based displays for sure,” and Brothers agreed: the scenes are what make AutisMate stand out from other autism apps. Another benefit? AutisMate has a variety of features which means you aren’t switching around to different apps or carrying around a bunch of different materials. AutisMate also comes with a variety of videos and pictures already pre-loaded which makes creating new activity schedules and hot spots quick and efficient. Lori Viator, a supervising BCBA, especially likes that using AutisMate on the iPad for her young adult clients “looks socially acceptable [in the community] as compared to traditional methods” which often include binders and Velcro schedules.

However, no app is perfect. Some of the kinks that the BCBAs and direct-care therapists have identified include transferring content from the old platform to the new AutisMate 365 platform, the inability to run schedules concurrently and have schedules running in the background, and the inability to input seconds into the timer feature. Always open to feedback and improving their product, the developers at SpecialNeedsWare have already improved on the app many times over in the 3 years since it was developed. With an advisory team of behavior analysts, speech-language pathologists, consultants, Ph.D.s, and Ed.D.s, the SpecialNeedsWare team has plenty of experience and expertise to draw from when improving their unique app.

So what is the future for the AutisMate app in the field of applied behavior analysis? Research, research, research! The behavior analysts and direct-care therapists at Including Kids, Inc. have implemented this app with many students and the individual data supports the effectiveness of this app for teaching a wide variety of skills to these clients. As a field, the next step is developing empirical studies to evaluate the different features of this app in teaching different skills. Currently, Including Kids, Inc. is conducting research to determine the effectiveness of using AutisMate for teaching conversation skills to children in inclusive settings, play skills to young children, and multiple-step task sequences to young adults with autism spectrum disorders. While these studies are a start, more research is needed to establish AutisMate as an evidence-based intervention tool in the field of applied behavior analysis. Preliminary data looks promising to support the use of AutisMate as an intervention tool.

As the BCBA's and direct-care therapists reported, AutisMate is an all-inclusive, comprehensive app that can be used to teach a wide range of skills from social skills, to communication and self-help skills. "[AutisMate] is one of the first apps I've seen that incorporates communication and programming [tools] within the same app," says Dantzler when asked the benefit of using AutisMate over other apps. Dantzler also believes the app helps promote generalization for her clients. Generalization is the ability to learn a skill in one setting, in one way, or with one person and then apply the skill in other settings, with other materials, and with other people. Individuals with special needs, especially with autism, often struggle with generalizing skills. Each of the features (i.e. grid, scenes, activity schedules, etc.) is highly customizable to each student which lends itself generalization of skills across various settings and people. Parent feedback has also been positive. "The parents who are using [AutisMate] are happy with it," says Dantzler, "[They like the] ease of use in the home environment." Many parents of young adults say they wish this app, particularly the scene displays, were available when their children were younger.

The verdict on AutisMate? At Including Kids, Inc., the AutisMate app has shown to be a highly effective, socially valid, multi-purpose intervention tool that reduces material preparation time, increases generalization, and promotes skill development for clients of various ages. The BCBA's and direct-care therapists at Including Kids, Inc. are looking forward to continuing to use AutisMate to teach their clients and to see what future features and improvements are developed for this all-inclusive, comprehensive app.

#### References:

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