BrainWare SAFARI and Students with Special Needs

BrainWare SAFARI is a software program that provides comprehensive cognitive skills development in an entertaining and motivating video-game format. By improving students' underlying mental processing skills, it enables them to be more successful across the curriculum, whether in reading, math or other subject matter. BrainWare Safari benefits all students, not just those with special needs. For students with special needs, however, it can help address many of the underlying barriers to learning that have prevented these students from reaching their academic potential.

BrainWare SAFARI develops 41 cognitive skills in six broad areas:

- Attention
- Memory
- Sensory Integration
- Visual Processing
- Auditory Processing
- Logic/Reasoning

Because BrainWare SAFARI works on skills at the level of basic mental processes, it is applicable for a broad range of students with disabilities. It helps students, not by working around the areas of processing that operate as barriers to learning, but by using areas of relative strength to strengthen weaker areas and drive them to the level of automaticity. The program benefits normal and high-performing students as well as those with identified learning issues. Application to specific areas of disability is provide in the following table:

Category of Disability	Expected Impact of BrainWare SAFARI
Autism	Case studies have shown effectiveness for children with Autism Spectrum Diagnoses (ASD), especially those aged 9 and older. For some younger or lower-functioning students repetitive behaviors interfered with use of the program. Students with a variety of diagnoses have shown improvement but those with High Functioning Autism and Asperger's experienced the most success. Improvements in sensorimotor and perceptual processing were observed with younger students. Older students showed improvements in attention skills, perceptual processing, reasoning and life management. Improvements in CARS ratings were also seen, particularly related to relationships and tolerance for frustration.
Mental Retardation	The program has been used successfully with children with IQs between 70 and 80. An average of 9 months of cognitive growth was seen during a school year when the students used BrainWare SAFARI, where this type of student usually experiences no growth or even regresses. While the students found the exercises very challenging, the level of fun increased their motivation and persistence greatly compared to other products the school had used.
Specific Learning Disability	In independent published peer-reviewed research, BrainWare SAFARI has been shown to increase the cognitive skills of students with specific learning disabilities to the level of normally developing students. Dramatic improvements were seen particularly in the areas of greatest deficit, including verbal working memory, short-term memory and broad attention. Average improvements of 0.8 years in reading and 1 year in math were seen in 12 weeks of use of the program.
Speech or Language Impairment	BrainWare SAFARI can be very helpful with auditory processing; auditory discrimination; immediate; short-term and working memory; and sensory integration skills. Students with speech or language processing issues would be expected to derive significant benefit in these areas from BrainWare SAFARI. The program does not comprehensively train phonemic discrimination.
Traumatic Brain Injury	Significant impact would likely be observed, depending on the nature of the brain injury.

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Important features for students with disabilities:

- Each student progresses at his or her own pace through the program and will spend more time working in areas where additional practice is needed.
- The exercises in BrainWare SAFARI incorporate the therapeutic techniques of clinicians trained to work with students with these types of disabilities, including vision therapy, speech pathology, occupational therapy, and psychology.
- Students may choose to listen to the instructions being read aloud, and read or listen to them repeatedly if necessary.
- Choices of a male or female voice and alternatives for the metronome sound are available since some students find certain kinds of sounds easier to hear than others.
- The video-game format makes BrainWare SAFARI inherently fun and motivating. Students experience the reward of success through the program.
- The program comes with an optional rating scale that schools may use as a pre- and post-assessment to demonstrate progress.
- Since developing underlying cognitive skills can boost performance across the curriculum, BrainWare Safari can help students benefit more quickly and lastingly from other interventions and curriculum.
- Reporting features enable teachers and administrators to monitor student progress and print reports that can be shared and discussed with an IEP team to gain a common understanding of a student's cognitive strengths and weaknesses and progress through the program.

Case Study: "Mike"

Age: 9 year 11 months

Age on Pre-Test: 9 years 0 months

Learning Issues: Slow processing
Slow learning rate
Spatial relations
Auditory working memory
Concept formation

Mike used BrainWare SAFARI for 16 weeks. He improved on all of the Woodcock-Johnson® tests administered. Parents noted that Mike completes his school work more quickly and confidently, and that he has become a better decision-maker.

Age on Post-Test: 14 years 4 months

Cognitive Improvement: 5 years 4 months

Case Study: "Andy"

Age: 12 years 4 months

Age on Pre-Test: 7 years 5 months

Learning Issues: Visual auditory learning
Visual matching
Working memory
Decision speed
Slow processing

Andy used BrainWare SAFARI for 16 weeks. He improved significantly in all areas except auditory working memory. Parents report that he pays better attention to directions and can work for longer periods without getting frustrated.

Age on Post-Test: 9 years 7 months

Cognitive Improvement: 2 years 2 months

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