



Background

COIL (Circle of Independent Learning) Charter School was the first charter school to open in Fremont California. COIL provides support to home-schooling families with personalized resources. The Circle of Learning includes the student, his/her parents, and an advisory teacher. They work together to develop a personalized plan that enables the student to discover his/her unique learning style and mature into an independent lifelong learner. COIL provided BrainWare Safari cognitive skills development software to 12 students during the 2010-2011 school year. Because the students were to work on the program independently at home (as they do with other aspects of the curriculum), a 90-minute webinar/demonstration was held for the parents to explain the program and provide guidance on coaching their students during the experience

Improvement in cognitive skills was measured using a behavioral rating scale completed before and after BrainWare Safari by the parents. The pre-evaluation was completed in November, 2010. The post-evaluation was completed for 9 of the 12 students between March and May of 2011. The evaluation rates each student on a set of behaviors that reflect a student's development, compared to peers, in specific cognitive processing areas, including various attention, memory, perceptual processing and thinking skills. Ratings on behaviors are aggregated within each area on the following scale:

Number of Points	Level of Skill
26 to 30	High
21 to 25	Above Average
16 to 20	Average
11 to 15	Below Average
10 or under	Low

Ratings on the pre-evaluation and post evaluation are compared to determine the level of improvement on the following score:

Number of Points Improvement	Ratings
12 or more	Excellent
7 to 11	Very Good
4 to 6	Good
1 to 3	Fair

The 12 students used BWS for an average of 44 sessions during a 17 week period, yielding an average of 3 sessions a week. During this time they completed an average of 126 ± 39 levels in BrainWare Safari. One student completed all 168 levels of the program in 8 weeks (3 sessions per week).



Evaluation Results

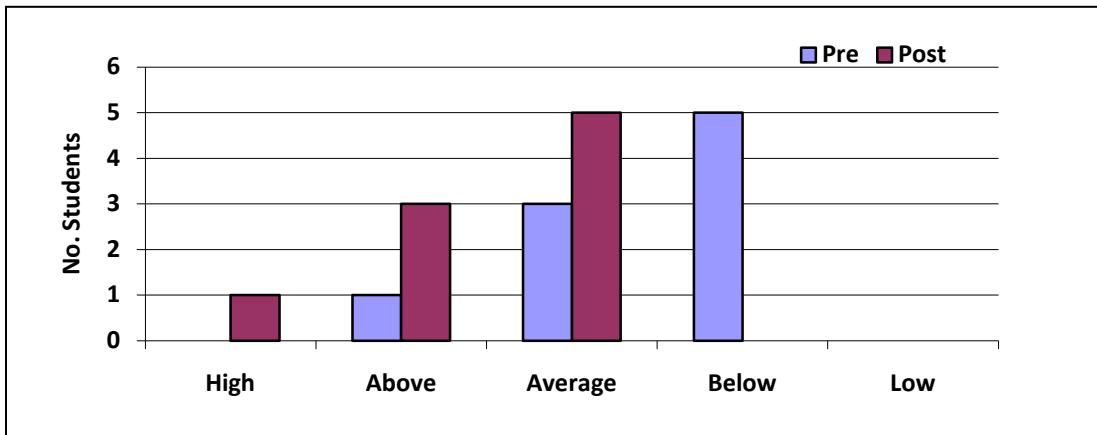
The COIL students who used BrainWare Safari experienced increases in their cognitive abilities across the different areas rated on the evaluations:

Cognitive Skill Area	Number of Students Improving Skills in the Area	% of Students Improving Skills in the Area
Memory	9	100%
Perceptual Processing	8	89%
Thinking	7	78%
Attention	6	67%

Memory Skills

As noted above, all 9 students improved their memory skills. On the pre-evaluation 5 students were rated Below Average and no students were rated High. On the post-evaluation, all of the students who had been rated Below Average had moved to Average or higher and one student was rated as High in this skill area. The changes are shown in Figure 1.

Figure 1: Number of students at each ranking of memory skills, pre- and post-evaluation



The degree of improvement in Memory Skills for these students was:

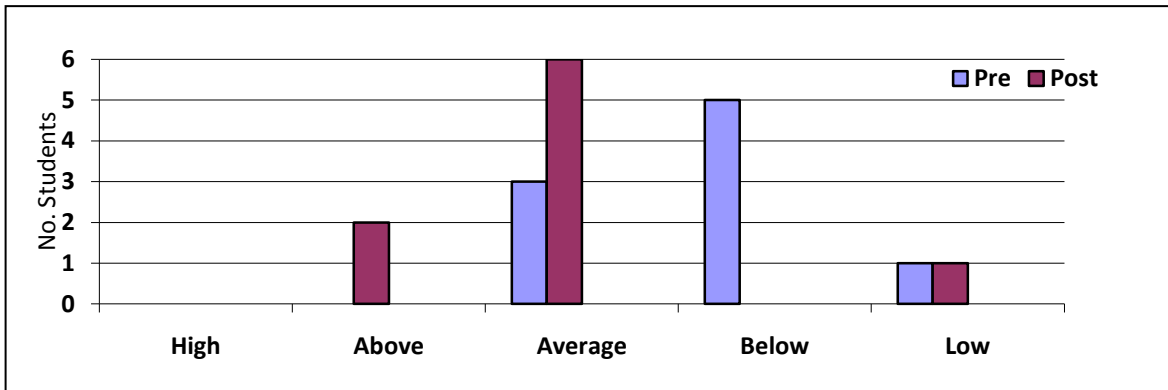
Degree of Improvement	Number of Students
Very Good	3
Good	2
Fair	4



Perceptual Processing Skills

As noted above, 8 of the 9 students improved their perceptual processing skills. On the pre-evaluation 5 students were rated Below Average and no students were rated Above Average. On the post-evaluation, all of the students who had been rated Below Average had moved to Average or higher and two students were rated as Above Average in this skill area. The changes are shown in Figure 2.

Figure 2: Number of students at each ranking of processing skills, pre- and post-evaluation



The degree of improvement in Perceptual Processing Skills for these students was:

Degree of Improvement	Number of Students
Very Good	2
Good	3
Fair	3

Thinking Skills

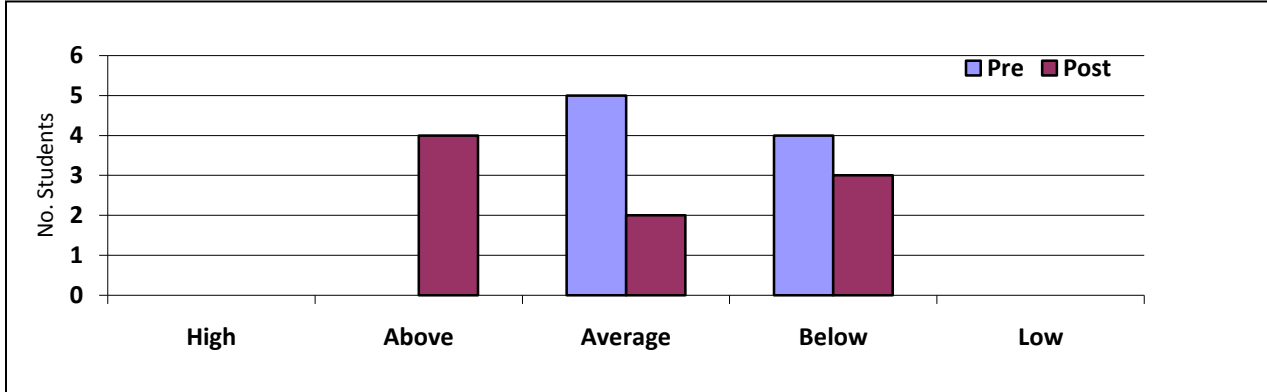
As noted above, 7 of the 9 students improved their thinking skills. On the pre-evaluation all 9 students were rated as either Below Average or Average. On the post-evaluation, four students were rated as Above Average in this skill area. The changes are shown in Figure 3.

The degree of improvement in Thinking Skills for these students was:

Degree of Improvement	Number of Students
Excellent	1
Very Good	2
Good	2
Fair	2



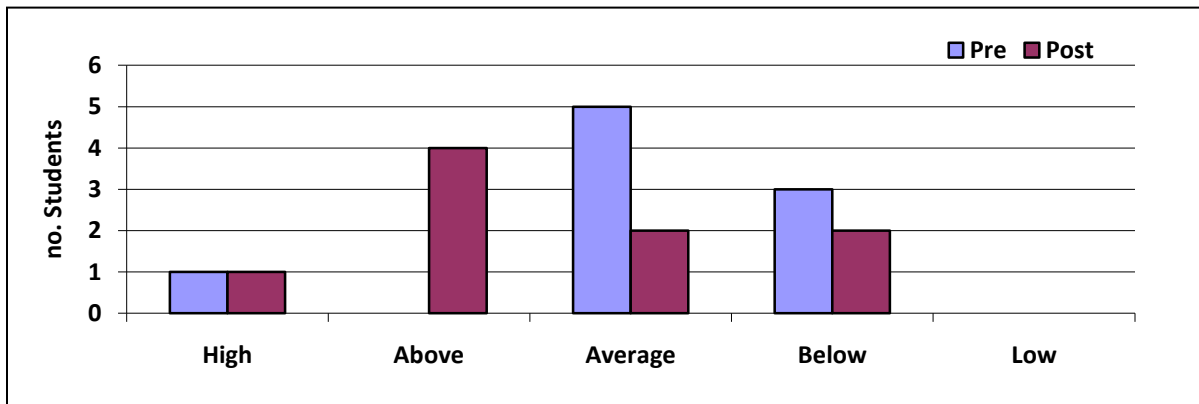
Figure 3: Number of students at each ranking of thinking skills, pre- and post-evaluation



Attention Skills

As noted above, 6 of the 9 students improved their attention skills. On the pre-evaluation 8 of the 9 students were rated as either Below Average or Average. On the post-evaluation, only four students were still rated in those ranges and 4 students were rated as Above Average where none had been rated at that level in this skill area on pre-evaluation. The changes are shown in Figure 4.

Figure 4: Number of students at each ranking of attention skills, pre- and post-evaluation



The degree of improvement in Attention Skills for these students was:

Degree of Improvement	Number of Students
Very Good	2
Good	2
Fair	2



Conclusion

The BrainWare Safari implementation at COIL Charter School was successful from multiple perspectives. First, the program was implemented with fidelity to the recommended protocol and students got sufficient time and intensity of usage to impact their cognitive functioning. The school's administration and the parents are to be commended. It can be difficult in a decentralized environment when all students aren't in a single classroom or lab to achieve this level of fidelity. Second, the students experienced significant improvement in their cognitive functioning across all of the areas assessed. In previous research, accelerated academic progress typically follows cognitive improvement. COIL students are positioned for that accelerated progress. Third, the single behavioral trait that was noted as improving for the most number of students was "Works independently." Improvement in this attribute was noted as improving for 8 of the 9 students. This is a skill that is particularly important and valued at COIL.