Case Study:

Co-Teaching Model Uses Computer-Assisted Instruction (CAI) To Improve Elementary Students' Spelling and Decoding Skills

Researched by: Dr. Tara Jeffs, Sandra Hopfengardner Warren, East Carolina University; Robin L. Rider, University of Washington, Bothell and Anna Evmenova, Snow Hill Primary School, Snow Hill, NC

October, 2007

QUOTES

"Eighty-three percent of students experienced gains between pre- and post-test scores."

The Literacy Challenge

Today, there are numerous computer programs available to teach reading and reading readiness skills, but only a few have been empirically validated (Lee & Vail, 2005). This study evaluates the effectiveness of a reading software program called WordMaker®, published by Don Johnston Incorporated used by K-12 teachers from general and special education. The teachers worked together to examine the use of computer-assisted instruction (CAI) on students having differing levels of reading ability. Of particular interest were the effects of WordMaker on the spelling performance of first graders in a co-taught learning environment. Researchers also wanted to determine the software's potential to enhance all elementary students' reading and writing skills for school-wide success.

Instruction and Research Design

A co-teaching model was designed for the special educator to be in the room for 1.5 hours each day. The general and special educators shared teaching responsibilities and planned all lessons together. Instruction was provided and research conducted within the co-teaching model (Cook & Friend, 1996; Vaughn, Schumm, & Arguelles, 1997), enabling teachers to work with small groups of students who rotated among the teachers, so each student received instruction from both teachers and a teaching assistant.

Research Questions

We examined the advantages and/or disadvantages of the use of CAI among students with different levels of reading ability. Of particular interest were the effects of WordMaker on the spelling performance of first graders in a co-taught classroom with these questions:

1. What impact does the WordMaker software program have on **vocabulary** and **spelling skills** of first grade students?
2. What impact does the WordMaker software program have on students with various **reading ability levels**, including those with identified disabilities?
3. How feasible is it to implement the WordMaker software program while delivering instruction aligned with a mandated state curriculum?

"Our findings support that WordMaker benefits struggling readers, as well as high-performing students. The program supports students at their "individualized pace" and provides enrichment and extra practice in the essential reading and writing skills."

Dr. Tara Jeffs

About WordMaker and the Four Blocks® Literacy Model

WordMaker provides a systematic, sequential approach to teaching phonics and spelling while offering engaging activities, graphics, supporting sounds and a motivating literacy environment for learners. Activities encourage learners to engage in experiential learning, guided discovery and knowledge transfer techniques. A wide range of learners are accommodated through creative and effective built-in scaffolds and customized feedback. WordMaker features extensive reporting of learner progress which provides an in-depth look at patterns and details of mistakes and successes. This program is developed around the conceptual framework of the reading instruction program, Four-Blocks Literacy Model, designed by Dr. Patricia Cunningham to maximize reading acquisition in:

(a) shared/guided reading, which involves the use of basal readers along with other materials;

(b) self-selected reading, where children have a choice of any book they like and respond to any part of that book they want;

(c) writing, which is usually carried out in a Writer's Workshop fashion where the teacher models all the aspects of writing (e.g., referring to a Word Wall for spelling assistance); and

(d) working with words, where children engage in reading and spelling of high-frequency words and decoding patterns (Cunningham et al., 1998)

Process

Students were immersed in a literacy-rich learning environment through meaningful pictures, posters, word walls, and books that were strategically placed around the room. The major pattern of instruction involved small groups engaged in cooperative learning activities. The groups are not fixed, but change according to the subject area, students' interests, and classroom themes. One day a week, the class was divided into three groups to perform the station co-teaching model. The general education teacher and assistant had two-thirds of the students working on different skills in math, reading or writing at two stations. At the third station (consisting of 3 computers), the special education teacher conducted this computer-assisted research with the remaining students. During the computer time, half of the students worked with the WordMaker software program while the other half remained at their desks to complete either spelling or vocabulary teacher-directed activities. The students rotated within this station until all had completed at least 1 or 2 WordMaker lessons on the computers. During the 1.5 hours of co-teaching block, students moved through all three stations spending approximately 30 minutes at each, allowing 18 students to use WordMaker.

Significant Finding – Works for All Students

Dr. Jeffs noted, "Although teachers were skeptical at first of how the software could be used every day for every student, the outcome was that, used as a supplementary instructional tool, WordMaker worked well with the curriculum. WordMaker was a key to truly providing differentiated instruction, it supported student's individual pace of learning."

An interesting finding was that the two groups that had statistical gains between the pre-test and post-test scores were the children with disabilities and the enrichment learners. Such findings support that WordMaker benefits struggling readers, as well the high-performing students. Teachers reported that the individualized pace of the software provided the enrichment group practice of essential reading and writing skills while advancing them to more challenging word levels. Students with disabilities benefited from the practice of essential skills in a learning environment that reduced distraction and required hands-on learning.

Throughout the use of the study, the students' approach toward literacy tasks began to change. Teachers observed students exploring words in their environment and playing games to make new words. Students in the disabilities group shared comments such as, "I like to pull the letters to the line" or, "it is fun!" These findings suggest that WordMaker doesn't just work as a remediation tool for specific areas of deficiency such as making words; it benefits all groups of students! When students were asked, "What did you like about the WordMaker program?" every student had positive things to say. One first grader shared, "I like WordMaker because I get to think and make words." Another student stated, "I can write difficult words. I can spell easy and hard words." One teacher said, "WordMaker corresponds well with the first-grade curriculum and provides extra activities for practicing essential skills."

Outcomes and Benefits

In a 10-week period the evidence showed that WordMaker had a positive impact on children's decoding and spelling skills. Eighty-three (83%) percent of students experienced gains between pre- and post-test scores. These findings suggest that WordMaker is an effective and complementary program to activities associated with first grade curriculum (e.g., spelling and decoding). Differences in students' pre- and post-test scores for the children with disabilities group and the enrichment group were found to be statistically significant. Student groups consisted of: average students, at-risk, identified disability, ELL, and enrichment.

"WordMaker is an excellent supplement to the first grade curriculum and enhances students' learning of phonics."

DON JOHNSTON

“WordMaker is based on years of success with struggling readers of all ages and is grounded in extensive field-testing. Because it is computer-based, students move at their own pace, enjoy individualized lessons and feedback and receive extensive practice on essential decoding and spelling skills.”

Dr. Patricia Cunningham
Author of WordMaker

DON JOHNSTON | The Leader in Intervention Solutions

X0218 11/08 1617B

26799 W. Commerce Dr., Volo, IL 60073 • www.donjohnston.com • 800.999.4660