

Considerations, Outcomes and Benefits of WordMaker Software for First Grade Students



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Computer-Assisted Instruction (CAI)

- Specific applications of computer technologies (drill-and-practice, tutorials, simulation activities)
- A stand alone activity or supplemental activity to enhance teacher-directed instruction
- More beneficial for lower-achieving students than higher-achieving students
- Explicit, strategic, and scaffold instruction, engaging time, successful rate, and immediate, objective, and positive feedback

Four-Block Literacy Model

- Cunningham, Hall and Defees's (1998) literacy program
- Reading instruction to children with wide range of entering levels without putting them in fixed ability groups
 - Shared/guided reading
 - Self-selected reading
 - Writing
 - Working with words
- Children are given letters to make words
- Enhances students' encoding and decoding skills

WordMaker Software Program

- Developed by Don Johnson Incorporated in collaboration with Dr. Patricia Cunningham, based on the Four-Block Literacy Model
- Systematic sequential approach to teaching phonics and spelling while offering engaging activities, graphics, and supporting sounds
- Learners are engaged in experimental learning, guided discovery, and knowledge transfer techniques
- Teacher-friendly and easy to install

Research Questions

1. What impact does WordMaker software program have on vocabulary and spelling skills of first grade students?
2. What impact does 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?

Setting

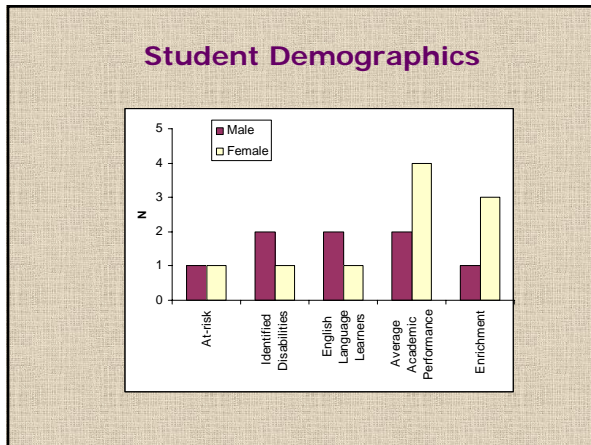
- Typical first grade classroom
- Primary school in rural eastern North Carolina
- 75% of students from low-income families
- Diversity
- Co-teaching environment – for 1.5 hours every morning
- Station co-teaching model (for the duration of this study)

Participants

- Eighteen first graders
- Five informal groups: with identified disabilities, at-risk, ESL, average, enrichment
- Two teachers and an assistant
- Sharing teaching responsibilities and planning lessons together

Student Demographics Table

Gender	Ethnicity	Special Services or Abilities
M	Caucasian	At-risk, receives speech and language therapy
M	Hispanic	Developmental disabilities, Previously retained
F	African American	At-risk, receives speech and language therapy
M	Hispanic	English Language Learner
F	African American	Average academic performance, speech and language therapy
M	African American	Average academic performance*
M	Caucasian	Learning disabilities
M	Hispanics	English Language Learner
F	Hispanic	English Language Learner
F	Caucasian	Developmental disabilities
M	African American	Qualifies for Enrichment Program
F	African American	Average academic performance
F	Hispanic	Qualifies for Enrichment Program
F	African American	Average academic performance
F	Caucasian	Average academic performance
M	Caucasian	Average academic performance
F	Caucasian	Qualifies for Enrichment Program
F	African American	Qualifies for Enrichment Program



Methodology

- Categorization of students only for the purpose of research
- Pretest/post-test to determine the impact of WordMaker software program on first graders with different reading levels
- Teachers' interviews
- Students written opinions and drawings about the WordMaker software program

General Procedures

- One day a week/10 weeks
- Three groups of students/three stations
- Two stations - working on skills in math, reading and writing
- Third station – computer station
- Within the third station the following activities:
 - working with the WordMaker software program
 - completing spelling or vocabulary teacher-directed game-activities


Sample Activities

- Vowels Jeopardy!
- Sounds Bingo
- Crossword Puzzles
- Vowel Workout
(use tennis balls with different vowel sounds, roll the ball, say the sound, name the sound, roll the tennis ball to somebody else if it's wrong)
- Roll, Name, and Write
(make a die, roll it, name the picture, identify the sound, write another word with the same sound)
- Add a Letter! Tic-Tac-Toe
(program each tic-tac-toe grid with a different rime [-ing, -at, -est, -eat], put several sets of magnetic consonant letters in a bag, take the letter, figure if you can add it to any rime/grid to make a real word, if so, label the grid)

Pretest/Posttest Assessment


- WordMaker spelling pretest to determine the appropriate starting level for each student
- Multi-level pretest assessing the mastery of each word level
- Most of the students started working with the WordMaker at Lesson 1
- 4 students started at lessons 26,31,36,46
- The words spelled during the pretest were used for the post-test

Sample WordMaker Activities Making Words




- Students drag letters
 - To make a simple two-letter word (at)
 - Move letters around to spell another word (ring-grin)
 - Take one letter away to spell another word (can-cap)
 - Add another letter to spell a new word (sad-sand)
- Auditory prompt and feedback
- Words on the word wall

Sample WordMaker Activities Working with Words




- Letter/Picture Match
 - Match pictures to the letter tiles that correspond to the first letter of the words that the pictures represent
- Sort by First Letter
 - Sort the words just spelled in the previous activity into columns under the letter tiles that correspond to the first letter of the words
- Auditory prompt and feedback

Sample WordMaker Activities Secret Word




- At the end of each word making lesson
- Use all the letters from the lesson to spell the secret word
- Possible clues
- Points are awarded based on the number of clues used

Sample WordMaker Activities Find Words



- Word recognition activity
- Find each word that was read aloud
- Racing the clock
- Possibility to adjust depending on student's abilities

Sample WordMaker Activities Wordo!



- Another word recognition activity
- Bingo-like game against the computer
- Finding words that were pronounced out loud
- Win points that are accumulated

Results/Question 1 Increased Skills

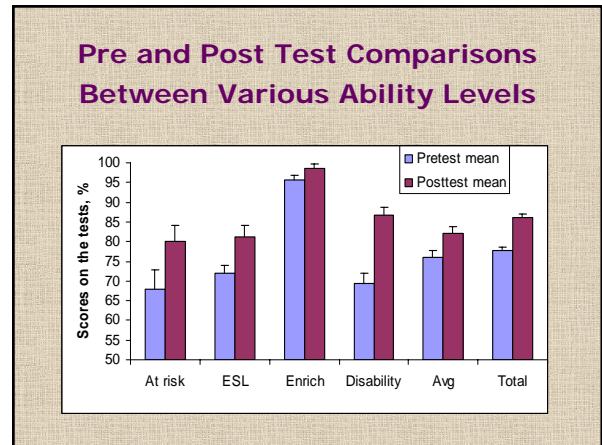
- 16 out of 140 possible lessons were completed
- 15 out of 18 students demonstrated improvement on the post-test
- The overall means on the pretest and posttest were M=77.7% and M=81.6% respectively
- The difference is statistically significant (t=0.0009, p<0.001, n=18)

Discussion/Question 1 Increased Skills

- 83% of students experienced gains between pre- and posttest scores
- Students progressed in their spelling and decoding skills
 - "jump"/"jumping", "has"/"had" examples
 - "kittens"/"rabbits" example
- However, little adjustment was made within the lessons if students were not successful with words in the lesson

Results/Question 2 Varying Abilities

- Scores were divided into five different groups: identified disability (n=3), at risk (n=2), ESL (n=3), average (n=6), enrichment (n=4)
- Students with identified disability had significant difference between the pretest (M=69.33) and posttest (M=86.67) scores (t=0.019506, p,0.05, n=3)
- Improvements in the enrichment group were also significant (pretest M=95.74, posttest M=98.65, t=0.04031, p<0.05, n=4)




Discussion/Question 2 Varying Abilities

- Different groups showed different levels of improvement
 - ESL – from 72% to 81.3%
 - At-risk – from 68% to 80%
 - Average – from 76% to 82%
 - Identified disabilities – from 69% to 87%
 - Enrichment – from 95% to 99%

Discussion/Question 2 Varying Abilities


- WordMaker program benefits struggling readers
 - learning environments that reduce distraction
 - hands-on learning
 - immediate feedback/speech feedback
- It also expands the abilities of the enrichment learners even further
 - individualized pace
 - more challenging word levels
- All first grade students regardless of the ability level can benefit from the program
 - Each student found something that catches his/her attention

Discussion/Question 2 Varying Abilities




- Here are some comments students (of different levels) made about different WordMaker activities:
 - “I like to play FindWords. We need to find things that the computer says. We need to do it fast because the time is running out.”
 - “I like Secret Word because it is fun. It is like a mystery and it gives you hints. It makes you figure the word out. And when you get something right, they give you points.”
 - “Wordo! is just like tic-tac-toe” or “it’s fun because you can beat the laptop or the laptop can beat you.”

Results/Question 3 Teachers’ Opinions



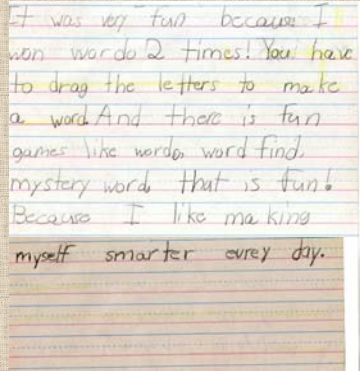
- “WordMaker software corresponds well with the first-grade curriculum and provides extra activities for practicing essential first-grade skills.”
- Corresponds to the following competences of the North Carolina Standard Course of Study (NCSCS): 1.01, 1.02, 1.04, 5.01, 5.02.
- “Regardless of the benefits it would probably be difficult to have every student work with the program every day due to time limitation and computer availability.”

Results/Question 3 Students’ Reactions




- “I like WordMaker because I get to think and make words.”
- “I like WordMaker. I can write difficult words. It’s fun. I can spell easy words. I can spell hard words.”
- “I like WordMaker because it gives me points.”
- “Wordo! is a fun game because sometimes I win. Sometimes she wins.”
- “You hear every letter and word you click on so you can figure if something is wrong.”

Sample Student’s Comments about WordMaker Software




It was very fun because I won wordo 2 times! You have to drag the letters to make a word. And there is fun games like wordo, word find, mystery words that is fun! Because I like making myself smarter every day.


Student’s Expression of Their Feelings about WordMaker Software



Discussion/Question 3 Natural Fit




- The WordMaker software program enhances first grade curriculum
- Literacy is the biggest part of any first grade daily routine
- The use of the software program was to complement teacher-directed activities
- The program was infused into the instructional routine




Limitations

- Length or duration of the used of the software
 - Significance could have been reach in all groups
 - Is there a possibility that over the time it will take to complete all 140 lessons students will get tired and less motivated to use it?
- The low number of students in each ability group and in the class overall




Benefits and Outcomes

- First grade students benefit from using the WordMaker software
- Significant differences in pre and posttest scores for students with identified disabilities and students involved in enrichment programs
- Students benefited from multimedia approach involving hands-on activities of moving letters, engaging graphics and sounds



Benefits and Outcomes

- Although teachers are skeptical of how the software could be used everyday; it works with the curriculum as a supplementary tool
- Both teachers and students enjoyed using WordMaker program



Considerations

- Time (it's not feasible for every student to use the program every day)
- Number of computers in the classroom
- New vs. old computers
 - "It is fun but it is so slow you would never imagine"
- Has to be a part of the literacy program (implement other components of the Four Blocks Literacy Model)