Mix Methods Research

"Findings Report"

Letters Alive: Case Study

Executive Summary

The evaluation of the Letters alive™ curriculum was designed by Dr. Tamra W. Ogletree and Jennifer K. Allen. The Letters alive™ curriculum goals for children who participate in the program in grades pre-K and kindergarten include acquiring an awareness of the letters in the alphabet, learning the specific sounds that letters make, understanding that letters are the building blocks for words and that words form sentences, and recognizing pre-k and kindergarten sight words. The research project was conducted at an elementary school in the southeast and utilized a case study approach to collect data across three pre-K and three kindergarten classes over a three month period. The researchers used mixed methods in order to obtain the most accurate and meaningful data possible, so quantitative and qualitative data were collected and analyzed. Guiding questions for the study included the following: a.) How effectively does the program operate to its intentions and goals? b.) To what extent does the program influence positive student outcomes?

Evaluation Methodology

For this particular study, pre-K and kindergarten teachers implemented the Letters alive™ curriculum with their students at an elementary school in the Southeastern part of the United States. Permission to work within the school was granted by the school principal and school system superintendent. Because the study involved research with human subjects, all Institutional Review Board requirements were followed. In order for students to participate in the study, parents had to read, sign, and return the informed consent form on behalf of their child, and students had to give their assent to participate. Teachers and paraprofessionals also had to sign informed consent forms.

The study's design was carefully and systematically planned. To focus on objectivity, accuracy, and validity, the researchers used a case study approach yielding three comparison groups within each grade level (a full-implementation treatment group, a partial implementation treatment group, and a control group). The researchers used random purposeful sampling to assign classrooms to groups. The full-implementation classrooms utilized the augmented reality/three-dimensional aspects of the curriculum, the partial-implementation classrooms used the letter cards and word cards without the augmented reality/three-dimensional features, and the control group classrooms used no parts of the program. Researchers collected data from these three pre-K classrooms and three kindergarten classrooms over a three month period. Mixed methods for collecting and analyzing data were used, with qualitative and quantitative data sets. Qualitative data included teacher and student interviews along with classroom observations,

while quantitative data consisted of results from the AIMSweb® (2003) pre- and post-assessments for early literacy skills (letter recognition and letter-sound fluency).

To obtain quantitative data, the researchers used the AIMSweb® Benchmark Assessments for Letter Naming Fluency and Letter Sound Fluency (2003). After careful consideration of other evaluation instruments, this assessment measure was chosen by the researchers for several reasons. First, the National Center on Response to Intervention (NCRTI) had recently awarded the AIMSweb assessment system the highest possible rating for validity and reliability among progress monitoring tools, making AIMSweb a leading assessment tool for assessing early literacy skills (PRWeb, 2009). Additionally, the AIMSweb® assessments were already being used by the school for all benchmark testing and progress monitoring in grades K-5, which made the assessments familiar and readily accessible. Furthermore, these assessments measured letter recognition and the ability to relate letters and sounds, which are two of the key emergent literacy skills addressed by the Letters alive™ Curriculum.

Since the initial assessments were administered in early February, the kindergarten pre-assessment data came from the Kindergarten Winter Benchmark, and the post-assessment data came from the Kindergarten Spring Benchmark, which was administered in mid-May. Both the pre- and post-assessments were administered by the kindergarten testing coordinators, of which there were two, and scores of participating students were reported directly to the researchers. Since there are no pre-K evaluation tools included in the AIMSweb® materials, the researchers used the Kindergarten Fall Benchmark for the pre-K pre-assessment data, which was also administered in early February, and they used the Kindergarten Winter Benchmark for the post-assessment data, which was administered in mid-May. Both the pre- and post-assessments were administered to participating pre-K students by the researchers.

Findings

The pre-K quantitative data sets reveal that students in the full implementation classroom of Letters alive experienced greater gains in emergent literacy skill development than the students in the partial implementation classroom, and students in both the full and partial implementation classrooms experienced greater growth than the students in the classroom using no parts of the Letters alive™ curriculum. The following data tables show that students in the full implementation classroom experienced the greatest gains on both the Letter Naming and Letter Sound Fluency assessments, and the average increase for the class was +14.76 letters named correctly and +13.93 letter sounds given correctly. In the partial implementation class, all but three students made gains on the Letter Naming Fluency Assessment, with a class average gain of +8.89 letters named accurately. Additionally, all students made gains on the Letter Sound Fluency Assessment, with a class average gain of +8 letter sounds produced correctly. For the class with no implementation, gains were far less notable, with class average gains of

+7.31 for Letter Naming Fluency and +3.5 for Letter Sound Fluency. In this class, fewer children made sizable gains and more children made no gains with four students showing decreased ability to produce letter sounds correctly at the end of the study period. Because the students in the full implementation classroom experienced greater growth than the students in the partial implementation classroom, and the students in the partial implementation classroom experienced more growth than the students in the classroom with no implementation, the researchers concluded that the Letters alive™ does yield positive outcomes for students.

The pre-K teachers reported considerable use of the Letters alive™ materials as their only additional supplemental emergent literacy curriculum consisted of Animated Literacy™, which is a program these teachers had used for several years and were already very familiar with. The full-implementation classroom used the materials (including the 3-D components) almost daily during the three month period, and the partial implementation classroom used the letter cards and sight word cards to the same degree. The full-implementation classroom teacher used the materials mostly during whole group reading sessions (because she said it was nearly impossible to utilize the 3-D features without catching the attention of all students), while the partial implementation classroom teacher used the materials with whole group, small group, and individualized instruction.

The pre-K teachers provided valuable qualitative data through their interview responses and during the classroom observation. Both the full implementation and the partial implementation teachers noted that the Letters alive™ curriculum perfectly targeted their students' emergent literacy needs. Many students still needed reinforcements for learning letters, sounds, and sight words, while some needed the challenge of building sentences. They also noted that while their students were used to the Animated Literacy™ curriculum for learning letters and sounds, some students seemed to connect better with the Letters alive™ materials, especially those students in the full-implementation classroom. The teachers believed that this, perhaps, may have been due to the multi-sensory aspects of the program.

The pre-K teachers discussed many advantages to using the Letters alive™ curriculum. During our interviews, the full implementation classroom teacher stated that her students loved when the animals came to life and that they were "engaged with them." She remarked that even students who typically had attention difficulties were engrossed during the Letters alive™ lessons. She added that a few of her students "really, really responded to it because of the sound and the visual stimulation." Of all of her students, she said, "They like hearing the computer-generated sounds of a letter. Like the letter E is 'eh.' They like hearing it come from the computer. . .they seem to hear that more than they do just me saying it. . .they love the visuals, love the visuals." In addition to seeing the animals come to life, she also reported that her

students loved seeing the video clips she showed that accompanied each animal because they enjoyed seeing each animal in its authentic habitat. The partial implementation classroom teacher discussed the fact that the letter cards and sight word cards seemed somewhat confusing and disconnected without the technological component at first, but she could see how adding the technological piece could really be a wonderful added resource for her classroom literacy program because she thought her students would really be enticed by seeing "the visual animals come to life." She also noted that the repetitiveness of using the letter cards on a daily basis and giving her students consistent exposure to them really helped familiarize her students with the letters and sounds. She liked the sight word cards as well, and she reported that a few of her students were already reading and the sight word cards had helped them recognize more words in context.

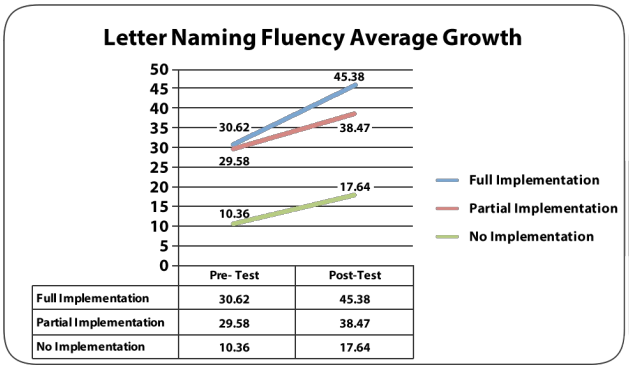
The kindergarten teachers discussed advantages of the Letters alive™ curriculum with the researchers. The full implementation teacher noted that her students really seemed to connect with the animals theme because animals are something that young children "can relate to." She also added that the program exposes children to new animals they might not yet know about and that this was a great unexpected outcome of the curriculum. The partial implementation kindergarten teacher added that even though she wasn't able to use the technological aspects of the program, she had watched the videos about the 3-D features, and she was excited about having the "added resource" for the following school year because she thought it would really captivate the students and get them interested in learning because it was multi-sensory with sights, sounds, movements, etc.

The project manager conducted student interviews with the students in the full implementation classroom throughout the study process to gather data on the students' experiences with the Letters alive™ curriculum. One student said that her favorite part of the program was "when the animals pop out," and she also added that she loved it when the animals moved and made sounds. Additionally, when she discussed the previous lesson when the animals would not move or make sounds, she thought that the animals were just sleepy and that was why they wouldn't cooperate. Another student stated that he liked learning about animals and that it was fun when the animals made sounds and moved. He noted that the dolphin was the coolest animal because "she can do back flips." Another student first answered that she didn't like learning about letters and sounds with the animals, but then she said, "Actually, I like the crocodile…because he scares us." Another student mentioned that the animals scared some of the students when they came out, but in a fun way. She talked about how the animals reminded her of going to the zoo with her mother.

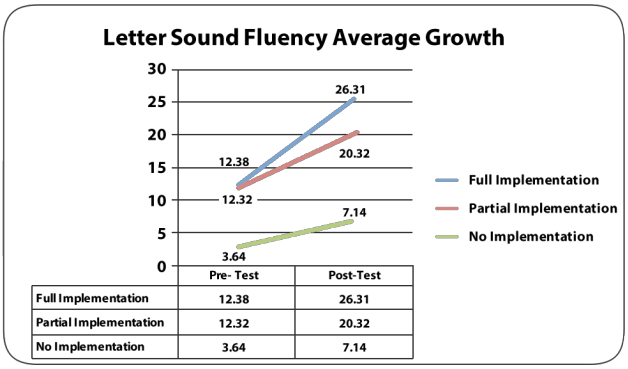
Student Outcomes for Letter Naming Fluency

The scores from the AIMSweb® Letter Naming and Letter Sound Fluency Assessments (the quantitative data from this study) suggest that the Letters alive™ curriculum positively impacts students' early literacy skills. 100% of students in the full implementation classroom experienced gains on the Letter Naming Fluency Assessment, while 84.2% of students in the partial implementation classroom experienced gains on that assessment, followed by only 78.6% of students in the classroom with no exposure who experienced gains on the Letter Naming Fluency test. Additionally, 100% of students in the full implementation classroom and the partial implementation classroom experienced gains on the Letter Sound Fluency Assessment, while only 64.3% of students in the classroom with no exposure experienced gains. Additionally, greater average gains were achieved in the classrooms with full or partial exposure than were made in the classroom with no exposure. While it would be risky to conclude that this same data stratification would result from students in other classroom settings, it is likely that, all things equal, students who receive full exposure to the Letters Alive curriculum will benefit more than those students who receive no exposure. Additionally, it must be noted that this study spanned only a three month period, even though the Letters alive™ curriculum is meant to last a full school year. This suggests that even greater gains could be achieved when the curriculum is implemented over the course of a full academic school year.

Student Outcomes for Letter Naming Fluency and Letter Sound Fluency



	Pre- Test	Post-Test
Full Implementation	30.62	45.38
Partial Implementation	29.58	38.47
No Implementation	10.36	17.64



	Pre- Test	Post-Test
Full Implementation	12.38	26.31
Partial Implementation	12.32	20.32
No Implementation	3.64	7.14

Credentials:

Tamra Ogletree has a PH.D. in Language and Literacy and a Certificate in Interdisciplinary Qualitative Research from the University of Georgia. She holds an L-7 certificate in Educational Leadership and a M.Ed. in Early Childhood and Middle Grades Education with an emphasis in Language Arts and Science education. She currently is an Associate Professor of Reading at the University of West Georgia. She is also the Regional Site Director of the GA Girl's STEM Collaborative Project, Director of the Cherokee Rose Writing Project which is part of the National Writing Project, and leader researcher of the Applied Research Team for the U-Lead endeavor of the University of West Georgia. She has presented at regional, state, national, and international conferences. Tamra has experience evaluating programs that fall under the umbrella of K-12 curricula, educational leadership, literacy initiatives and school-corporation partnerships.

Jennifer Allen has a B.S.Ed. in Early Childhood Education from the University of Georgia and a M.Ed. in Reading Instruction from the University of West Georgia. She also holds an in-field endorsement for Gifted Education and an ESOL endorsement. Jennifer has taught elementary school students for ten years, working in second, fourth, and fifth grade classrooms and in the gifted resource setting. She is currently a Graduate Teaching Assistant in the Reading, Writing, Children's Literature, and Digital Literacies program at the University of Georgia where she is working on her PhD. She is a Teaching Consultant and Legislative Advocate for the Cherokee Rose Writing Project, and was an invited consultant for the Just Write Writing Academy and Camp Kudzu Writing Academy at the University of West Georgia.

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