



Enhancing Critical Reading Skills with Kindergartners: A study of a Computer-Based Intervention

A Digest of Research on Learning Letter Sounds

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A key component of Phonemic Awareness (PA) is the capacity to distinguish the individual sounds in words. It is an essential capability in learning to read that needs to be taught and learned. Phonics is also identified by the National Reading Panel (NRP) as another essential component of early reading instruction and is thought to be so important that Stahl in 1998 noted, “99% of K-2 teachers consider phonics instruction essential (67%) or important (32%).” Learning Letter Sounds (LLS), now available with the *A+nyWhere Learning System*, is designed to teach those skills. This research study investigated the effectiveness of LLS in helping children acquire early literacy skills.

In order to objectively evaluate the efficacy of LLS in producing those skills necessary to support reading for children, an independent measure outside of its internal assessment capabilities was required. The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) was chosen both because the participating school was already planning to use it and because it is a widely used tool that specifically assesses the acquisition and development of letter names and sounds, phonemic awareness, and evaluates basic decoding skills in kindergarten-aged school children. The test is highly predictive of later student success in learning to read, sensitive to instructional changes, and has demonstrated robustness to retesting without reducing the validity or reliability of the measures (Kaminski & Good, 1998; Good & Kaminski, 2002).

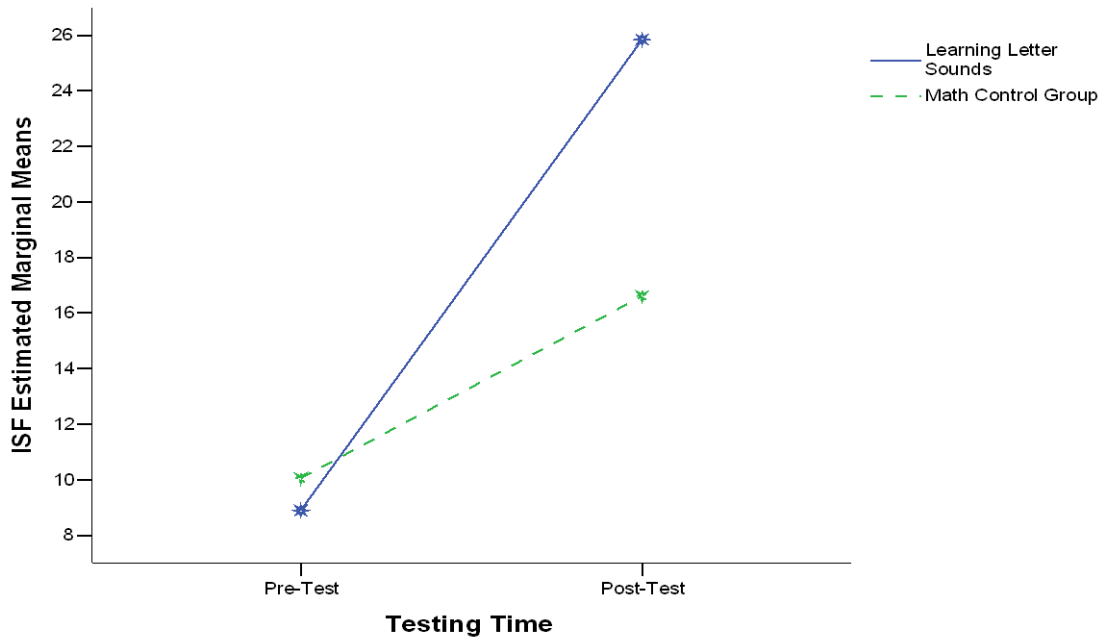
In this study, an Oklahoma rural school possessing the facilities and the willingness to participate was the site of the research. This sample consisted of 43 kindergarten students (22 male, 22 female; 26 eligible for free lunch; and 35 Caucasian, 7 Native American, and 1 other).

Participating students were assigned into one of two groups, either a group that used the Learning Letters Sounds software or one that used a Math software program for a period of nine weeks. All students were tested using DIBELS pre and post participation in this study. The hypothesis was that the students in the LLS group would demonstrate significantly greater improvement over time on each of the DIBELS measures when compared to the change in performance of the Math Control group. While three DIBELS measures were used, only the Initial Sound Fluency subtest resulted in significant group differences. The purpose of Initial Sound Fluency (ISF) is to assess an individual’s ability to distinguish and generate the initial sound in a verbally presented word within a time limit of one minute. Participants are shown four pictures with simultaneous oral recitation of the picture’s name, and then asked to identify which of the four pictures begins with the sound just presented. The measure is the amount of time the child takes to identify the correct sound which is transformed into the number of correct identifications that occur within one minute.

The results (see Figure One) indicated that all children improved their test performance over time. The students using Learning Letter Sounds improved significantly more on the Initial Sound Fluency (ISF) subtest of the DIBELS than did the comparison group. This significant effect indicates that the children exposed to the Learning Letter Sounds software

demonstrated an accelerating improvement over time as compared to the performance of the Math Control group.

Figure One: ISF Average Scores by Group over Test Times.



Statistically significant results can be very small in practical, day-to-day terms. That is not the case here. The gains made by the students were great enough to be important for students in real life. From a statistical point of view, the size of the effect of LLS was large explaining about 21.3% of the result. This finding is important because when it is combined with an earlier LLS study it increases the empirical evidence that LLS is an effective intervention to increase students' phonemic abilities. In McDonald & Trautman (2005) research the use of the LLS program significantly improved the DIBELS measures of Phonemic Segmentation Fluency as compared to a Math-only control group, and this current research indicates that LLS exposure significantly improves a child's performance on DIBELS Initial Sound Fluency. These encouraging results suggest that Learning Letter Sounds is an effective aid to Phonemic Awareness instruction.

Nicholas B. McDonald Ph.D.
The American Education Corporation, Oklahoma City, OK

Thomas S. Trautman Ed.D.
The American Education Corporation, Oklahoma City, OK