

Florida Center for Reading Research

Waterford Early Reading Program

What is Waterford Early Reading Program?

The *Waterford Early Reading Program (WERP)* is a comprehensive early intervention curriculum designed to develop literacy for kindergarten through third grade students. The three levels of the program are for emerging, developing, and fluent readers and include multi-media technology to provide daily, research-based, individualized instruction for every student in the classroom. Each of the three levels contains one school year's worth of instructional material so students work at their instructional level regardless of the grade level in which they are placed. *Waterford* provides all the materials necessary for implementation including the teacher guides (teacher-led or center-based off-line activities), CD's, videotapes, audiotapes, student materials, parent resources, hardware, software (curriculum that students engage in on the computer), and earphones with microphones. The computers can be in a lab setting or at a center in the classroom that contains three to four computers. Guidelines for teachers to follow in order to place students at appropriate levels of the program are also delineated in the *Waterford 'Getting Started Guide'*. For the software component, engaging tutorials regarding how to use the mouse are available for young children.

Pre-readers and kindergarten students participate in Level 1 to develop phonological awareness, build automatic letter name and letter sound recognition, understand print concepts, and build vocabulary through engaging activities, songs, and rhymes. The software component of Level 1 contains 45 hours of instruction and is designed to prepare students for beginning reading instruction. These emerging readers spend approximately fifteen minutes per day using the software portion of *Waterford*. There are suggested off-line activities that correlate to the content of the software for teachers to implement in the classroom in either small groups or with the entire class. In order to reinforce and practice skills, the stories the students encounter in the software are sent home to become part of the student's personal library and include twenty-six Sing a Rhyme Books and 26 Read with Me Books.



Level 2 builds on the foundation provided at Level 1 and teaches beginning reading skills for the developing reader. Ninety hours of instruction are included within the software component at this level and students spend approximately 30 minutes per day at the computer reinforcing phonological awareness skills, letter sound recognition, word recognition skills, and comprehension. Teacher guides offer off-line teacher-led activities that provide explicit and systematic lessons to review phonological awareness, letter sounds, word recognition, and spelling. Explicit and systematic instruction for teaching comprehension strategies, such as prediction and sequencing is also delineated in the teacher guides. These teacher guides follow effective teacher practices when introducing concepts and skills (introduce, model, practice, evaluate) and provide students with ample independent practice. Lessons from the teacher guides can be implemented in large or small groups. The stories that students engage in with the software are also sent home to add to each student's personal library. These books include 16 large, full-color traditional tales and 63 decodable books.

Level 3 moves students from the beginning reading skills learned at Level 2 toward developing fluency and comprehension. At this level, students learn more complex word patterns, more advanced spelling and writing skills, higher level comprehension strategies, and practice building reading fluency. Ninety hours of instruction are provided by the software component at this level and each student spends approximately 30 minutes per day at the computer. Students receive copies of the 84 books that accompany the software activities to add to their personal library. These books include 30 decodable (called Readables) books, which every student should be able to read independently and 54 Read-Along books that students can read independently or with a family member. Teacher led activities are provided in the teacher guides and can be implemented in small or large groups. These activities accompany each Readable and each Read-Along Book and include building skills, word work, spelling, writing, and comprehension.

Keyboarding to Read & Write is incorporated into levels one and two and helps students learn to keyboard without looking at their fingers. This interactive software program teaches keyboarding skills and basic word processing skills in a way that is engaging and motivating for the students.

The *Waterford School Manager* allows teachers to manage the software program and adapt the activities to specific needs of the students. Teachers use the *Waterford School Manager* to begin sessions, store student information, form reading groups, listen to students read (students build fluency by recording themselves reading stories and teachers have the capability of listening to these recordings), assign courses, track student progress, and print student and class reports. The *Manager* software is teacher-friendly and provides step-by-step directions both within the software as well as in an instructional manual.

Is Waterford Early Reading Program aligned with Reading First?

The *Waterford Early Reading Program* includes the five essential components for effective reading instruction: phonemic awareness, phonics, vocabulary, fluency, and comprehension. These components are organized in a cohesive manner and are taught explicitly and systematically within the program.

Phonological awareness is incorporated within Levels 1 and 2 of the software program. Activities progress through the appropriate developmental hierarchy. Broader phonological awareness skills such as listening to nursery rhymes and identifying and making rhymes are introduced before segmenting words into syllables. Finally, students engage in phonemic awareness activities such as blending and segmenting words and manipulating sounds in words at the phoneme level. Students are provided ample opportunities to practice phonological awareness as they engage in each activity more than once. The number of times a student sees an activity is determined by the ease with which he or she masters the skill. Off-line phonological awareness activities arranged by increasing difficulty for the teacher to implement with students in small groups are included in the teacher guides.

Level 1 provides systematic instruction in phonics to prepare students to decode simple words. Level 2 builds on the phonic skills mastered in Level 1 by providing further instruction and practice in decoding strategies. This instruction addresses letter sounds, letter patterns, consonant blends, long and short vowel patterns, common irregular words, vowel digraphs, word families, key words, and context clues. Level 3 extends these skills to help students become fluent readers. Phonics instruction is blended throughout the *Waterford Program* such that activities

that teach letters or words are always followed by books that use the letters or words in familiar as well as new situations.

All three Levels of *Waterford* are designed to expose students to a rich and comprehensive vocabulary foundation. Level 1 focuses on readiness skills and vocabulary that all children must know to be successful in school. Level 2 extends this knowledge and teaches students to use reading “tricks” such as using context to discover word and sentence meanings and using known words to help identify unknown words. Finally, Level 3 incorporates interactive book activities that allow students to click on “vocabulary words” as they appear in the text to hear the words pronounced and defined.

Teachers are encouraged to read to students daily to provide a model of fluent reading. Level 1 engages students in rich language and print experiences while fostering the development of print awareness and letter automaticity. Decodable texts, called *Readables*, are central to the instruction provided at Levels 2 and 3. The text of the *Readables* correspond to the letter-sound relationships the students are learning in other activities. Fluency building strategies, such as repeated readings, are incorporated within Levels 2 and 3. Students listen to a skilled reader and try to imitate the reader’s expression and rate as they record themselves reading stories. Students listen and correct themselves as they replay their recordings. Teachers can also use these recordings to regularly assess each student’s reading fluency progress. Students read familiar passages for speed in Level 3. After reading and recording the passage, the student receives feedback on how many words were read per minute. Students take home the books from which they are reading within the program and are encouraged to practice silent reading or reading aloud with family members.

Students are taught to think about text before, during, and after they read throughout all levels of the *Waterford Program*. Beginning in Level 1, students are focused on the meaning of the text and are taught comprehension strategies, such as sequencing, in a way that is developmentally appropriate. Ten important comprehension strategies, such as previewing (peek at the story) and summarizing (sum up), are explicitly taught and practiced throughout Level 2. Every Read-Along book is accompanied by Get Ready activities (prereading) and Think About It activities (after reading). Level 3 provides students opportunities to practice the comprehension strategies learned in Level 2 and introduces four more advanced strategies. These advanced comprehension strategies include story structure and semantic organizers. Teacher guides encourage teachers to implement off-line activities for students to practice using comprehension strategies with the variety of books that accompany the program.

The professional development that accompanies the *Waterford Early Reading Program* is extensive and ongoing. It includes a three-year commitment to training and support. A Pre-Training meeting with a district or school administrator determines the programs usage expectations, a strategy for optimal implementation, and a plan for future professional development. An initial on-site training day consists of an overview of the program, demonstrations, hardware and software management, and effective implementation. The follow-up visits include classroom observations and feedback, tracking student progress, and customizing the program. A three-year subscription to the *Best Practice Newsletter* is provided as part of the program’s professional development. Teachers can also receive phone and electronic mail support from their Educational Trainer and Customer Care hotline.

Research Support for Waterford Early Reading Program



The *Waterford Institute*, a non-profit educational organization, devoted many years and \$25 million dollars developing the *Waterford Early Reading Program*. The content of the *Waterford* program was founded on current, research-based principles of reading instruction. There have been a significant number of well-structured research investigations on the effectiveness of the *Waterford* program conducted since its inception. A representative sample of those studies will be presented here.

A study of the *Waterford Early Reading Program (WERP)* was conducted in four kindergarten classrooms at an elementary school in Norwalk, Connecticut during the 1998-1999 school year. A total of 136 students participated, with 73 students in the treatment group and 63 students in the control group. There were no significant differences between the two groups on a pre-treatment measure of knowledge of the alphabet, phonemic awareness, knowledge of 10 basic print concepts, the ability to read grade appropriate monosyllabic words, and the ability to write a simple sentence. The treatment classes received their usual reading instruction plus 15 minutes of *WERP* instruction daily, beginning in September, 1998. The control group received their usual instruction but no *WERP* instruction. Performance on the above-named measures was again evaluated in April, 1999. Statistically significant differences were found on the post-test in favor of the treatment group. The average score for the control group was 52.2, compared to a mean of 66.7 for the treatment group (this score is the total across several areas of measurement). The gains made by the treatment group were also significantly better than the gains of the control group. The control gained an average of 28.4 points whereas the treatment group averaged a gain of 38.0 points. Also of note in this study is that a separate analysis was conducted on the performance of the lowest third of the class. Highly significant gains were found for this portion of the class in comparison to the lowest third of the control group. The effect size for this difference was 2.38 (an effect size of .2 is generally considered to be significant), which means that the treatment group achieved a remarkable mean gain score that was more than two standard deviations above the mean of the control group.

A kindergarten study (Hecht, 2002) was conducted with at-risk inner city and rural Ohio public school students during the 1999-2000 school year. Ten subtests of reading-related skills, grouped into four major categories, were administered to 76 kindergarten students (42 in the treatment group, 34 in the control group). The four broad categories of reading tests were alphabetic comprehension, literacy familiarity, phonemic manipulation, and verbal language fluency. The treatment group was given the *Waterford Early Reading Program* as part of its regular reading instruction, whereas the control group was not. There were no general differences between the two groups at the time that instruction was implemented in the fall. Spring post-testing led to the conclusion that children in the group that received the *WERP* computer-assisted instruction performed significantly better on the post-test than the children in the control group on all tasks except knowledge of letter names and sounds, and print concepts, where both groups were even. The investigator pointed out that the letter name and letter sound subtests have a natural ceiling, or limit above which a child cannot score. This means that a student or group of students cannot continue to show growth beyond a certain point, so that a difference or gap between groups may be dramatically narrowed because it was impossible for the

higher-scoring group to continue to improve. The investigator made several specific comments about the results. In spelling, although the *WERP* treatment group performed significantly better than the control group, both groups remained below grade level at the time of the spring post-testing. Some of the most remarkable differences in gains between the two groups were in the area of the phonemic subtests (elision, segmenting, sound matching, and blending). An example is found on the elision subtest: the control group gained .313 points pre- to post-test, a gain of 6.12%; the *WERP* group gained 5.95 points, for a gain of 348.64%. The *WERP* treatment group's growth in this skill was about 57 times greater than that of the control group. A final conclusion from examination of the data in the study is that, although the children in the control group acquired a basic alphabetic foundation, they didn't acquire the accompanying phonological skills that would truly prepare them to begin more advanced reading instruction in first grade.

A treatment group and comparable control group of kindergarten and first graders were investigated during the 2000-2001 school year in St. Louis, Missouri. The school participating in the study (Jadali & Wright, 2001-2002) was in a suburban population, with 44% of the children on free or reduced lunch and 84% of the children learning English as a second language. In this study, the *WERP* treatment group was located in one school, and the control group that didn't receive *Waterford* intervention was in another school with very similar characteristics. Reading performance for the children during both the fall pre-test (September, 2000) and the spring post-test (May, 2001) was assessed using the Gates-McGinitie Reading Test (McGinitie & McGinitie, 1989), a nationally normed instrument. Testing following the 2000-2001 school year indicated that there were superior results for children in the treatment groups in both the kindergarten and first grade. Sample gains at the kindergarten level were raw score and stanine gains that tripled those of the control children, normal curve equivalent score gains that doubled those of the control children, and percentile rank gains 67% higher than the control children. In the first grade, advantages for the treatment group showed raw score post-test results 34% higher, end of year percentile ranking of 76.2 compared with 42.5, a grade equivalent of 2.8 compared with 1.8, and 30 children ranking above the 80th percentile compared with 5 in the control group.

The final study to be reported was recently published in the *Reading Research Quarterly* by Dr. Wendy Paterson and her colleagues (Paterson, Henry, O'Quin, Ceprano, & Blue, 2003). These investigators conducted an independent investigation of the *WERP* in 7 kindergarten and 1 first grade classroom, and compared performance of children in these classrooms with students from eight other classrooms. This was the first year the *Waterford* program was implemented in this school district, and participants in both the *Waterford* and control groups were chosen from larger lists of teachers who volunteered to participate in the study. An effort was made, by contacting district administrators and supervisors, to match the socio-economic status of the schools participating and to roughly equate the classrooms in terms of teaching style of the teacher. The *Waterford* program was "fully functional" in the classrooms beginning in November. Instructional outcomes were investigated using the observation survey developed by Marie Clay (1993), which contains subscales measuring alphabetic knowledge, concepts of print, word recognition, hearing sounds and letters in dictation, writing vocabulary, and reading level. To equate children in the sample on pre-literacy skills at the beginning of the year, scores on the Brigance Screen (Glascoe, 1997) were used as a covariate in the analysis. Observers in these classrooms reported that students were generally "engaged, directed, enthusiastic"

(p.194) while working on the *Waterford* program, but an overall multivariate analysis of variance indicated no differences at the end of the year in performance between the *Waterford* classrooms and the classrooms that did not use the *Waterford* program. The one subscale that did produce different scores (Reading Level on leveled books) showed a difference in favor of the non-*Waterford* group. The investigators reported that the *Waterford* program was used with "high fidelity" across all classrooms, but they did not provide utilization data to show how much the program was actually used in the classrooms. It was surprising that such data was not included, as it is easily available as part of the computer record of use.

The instructional design and content of the *Waterford Early Reading Program* is consistent with what we know from current research for teaching beginning reading. There is substantial and consistent evidence from other independent research that appropriate and consistent use of the *Waterford* program produces positive outcomes on a wide range of reading and pre reading skills in kindergarten and first grade children. In summarizing the research evidence in support of the *Waterford Early Reading Program* however, it is important to note that the lack of positive effects in the most recent published study. This suggests that more careful attention should be given in future research to the conditions of classroom context and program use that can create variability in its effects on early literacy development.

Strengths & Weaknesses

Strengths of *Waterford Early Reading Program*:

- There is a strong Home-Connection component to *Waterford* that consists of a Home Link Newsletter with suggestions for continued learning at home. Additionally, each student is provided with personal copies of the videotapes, books, and music that accompany the program. There are also activities from the software that the teacher can print out and send home as homework or use in the classroom for extra practice.
- *Waterford* is correlated with the Sunshine State Standards Grade Level Expectations for Language Arts. Specific activities that match each GLE are outlined in the materials.
- Students are provided with ample practice reading decodable stories and more sophisticated text such as nonfiction, poetry, biography, and folktales with appropriate scaffolding.
- The multi-sensory approach and combination of animation, sound, music, and singing can be motivating for many students, especially those with special needs and second language learners.
- The *Waterford School Manager* ensures that students are working at their instructional level and provides teachers specific reports so that they may adapt instruction to meet individual needs.
- Immediate feedback and appropriate error correction and scaffolding are built into the computer program at each Level.
- Explicit and systematic spelling and writing instruction is included in the *Waterford Early Reading Program*.
- The efficacy of the *Waterford Early Reading Program* is supported by scientific research.

Weaknesses of *Waterford Early Reading Program*:

- None were noted.

Florida counties that have schools that implement WERP

Alachua County	352-955-7300	Leon County	850-487-7100
Bay County	850-872-4100	Manatee County	941-741-7200
Brevard County	321-631-1911	Marion County	352-671-7700
DeSoto County	863-494-4222	Martin County	772-219-1200
Duval County	904-390-2000	Miami-Dade County	305-995-1000
Flagler County	386-437-7526	Orange County	407-317-3200
Gadsden County	850-627-9651	Osceola County	407-870-4600
Glades County	863-946-2083	Palm Beach County	561-434-8000
Hamilton County	386-792-1228	Pinellas County	727-586-1818
Hendry County	863-674-4550	Saint Lucie County	772-468-5000
Highlands County	863-471-5555	Santa Rosa	850-983-5000
Hillsborough County	813-272-4000	Taylor County	850-838-2500
Holmes County	850-547-9341	Volusia County	386-734-7190

For More Information

<http://www.waterford.org/institute/werp.html>

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