HOMER

The Research Behind HOMER:
Our Approach to Teaching Literacy

1. Introduction

HOMER is the first digital foundational reading program, created by literacy experts and advisors to the new Common Core standards, combining decades of experience in education and in the classroom. Our program is both visually engaging for a child and highly effective, based on a proven body of research on how children best learn to read.

2. Successful Reading Programs Must Be Explicit, Systematic, and Sequential

HOMER follows an explicit, systematic, and sequential approach to reading instruction.

Explicit teaching is a fancy way of saying that a teacher will teach sound and letter correspondences to children in a direct manner. A teacher who uses an alternative, non-explicit approach relies on a student's ability to intuit relationships between sounds and letters through repeated exposure.

Systematic means a planned approach to instruction.

Sequential means working in a set order. The order might vary from program to program, but all such approaches follow a planned sequence that is carried out systematically.

Numerous studies confirm the advantages of teaching phonics in an explicit, systematic, and sequential way. This was the conclusion of Marilyn Jager Adams (1994) in her book *Beginning to Read: Learning and Thinking about Print*, the National Reading Panel, or NRP, (National Reading Panel, 2000), and a review of the NRP evidence conducted by Ehri, Nunes, Willows, Schuster, Yaghoub-Zadeh, and Shanahan (2001). One important conclusion we can derive from this research is that when instructional materials, including apps and other digital programs, present beginning reading skills in a random manner or as isolated learning events, they might be fun and momentarily helpful, but they are unlikely to be successful in any meaningful way.

In HOMER's explicit, systematic, and sequential reading program, children follow a set path that starts with the introduction of a letter sound and its corresponding letter and moves step-by-step toward reading and spelling words using the targeted sound in conjunction with sounds a child has already mastered. The child can rely on this progression early— before the end of first grade (National Reading Panel, 2000).

3. Learning to Read Is Not Intuitive

There are various approaches to phonics instruction and there is some debate over which approach is best. The two most implemented approaches are synthetic phonics and analytic phonics. Synthetic phonics is the method we employ in HOMER's reading program. It is the process of learning the sounds associated with each letter and then blending the sounds to read words along with segmenting sounds within words in order to spell. Analytic phonics focuses on analyzing the sounds in words after a word is identified. Analytic phonics often relies on presentation of word families, such as pan, man, tan, ran.

The NRP and research reviewed by Torgerson, Brooks, and Hall (2006) found no significant advantages of one system of phonics instruction over the other. However, England's *Rose Report* (Rose, 2006) found strong advantages to synthetic phonics based primarily on Johnston and Watson's (2005) seven-year longitudinal study conducted in Scotland. The Johnston and Watson report notes that at the end of primary school (a span of seven years) students who were taught via synthetic phonics were substantially ahead of their chronological age in word reading (3 years, 6 months), reading comprehension (3.5 months), and spelling (1 year, 8 months).

Just as impressive as these long-term results are the gains children made right from the start. At the end of a sixteen-week introduction to a synthetic phonics program, the children in Primary 1 (five- and six-year olds) who were taught synthetic phonics were seven months ahead of their chronological age group in both reading and in spelling. *The Rose Report* gives key features of instruction that include short periods of instructional time, a consistent approach to each lesson, ample review, and linking spelling with reading (Rose, 2006). All of these are components of HOMER's program.

4. Importance of Combining Reading and Spelling

There are great advantages to helping children appreciate the reversible nature of the alphabetic code. It is important to teach children that the process of blending or "gluing" sounds together in order to read a word is, in fact, a two-way street. Reverse the process, and a child can hear a word, "unglue" or segment the individual sounds, identify each sound with a letter, and therefore spell the word. Better yet, these two skills of gluing sounds together to read words (decoding) and ungluing individual sounds and letters to spell (encoding) reinforce each other. Making sure that children experience the reversible nature of reading and spelling is the strong recommendation of *The Rose Report* and is a central part of HOMER's instructional approach (Rose, 2006).

5. Importance of Phonemic Awareness

A child's ability to hear individual sounds in words and to manipulate those sounds fundamentally influences that child's ability to learn to read. The National Research Council published a report that describes phonemic awareness as "the insight that every spoken word can be conceived as a sequence of phonemes" (Snow, Burns, & Griffin, 1998). The authors go on to say that this awareness is key to a

child's ability to take advantage of the alphabetic code for sounding out words, and they note some of the studies that demonstrate the close relationship between the ability to learn to read and skills in phonemic awareness (Snow, Burns, & Griffin, 1998). Snow et al. (1998) maintain that although phonemic awareness is crucial for learning to read using a phonetic approach, attaining this skill is not always easy. A joint paper published by the International Reading Association and the National Association for the Education of Young Children estimates that 20 percent of young children fail to acquire phonemic awareness skills unless they are explicitly taught (Learning to Read and Write, 1998). Snow et al. (1998) describe the problems caused when a child's phonemic awareness is weak: "To the extent that children lack such phonemic awareness, they are unable to internalize usefully their phonics lessons. The resulting symptoms include difficulties in sounding and blending new words, in retaining words from one encounter to the next, and in learning to spell."

Although phonemic awareness covers a span of tasks related to a child's ability to hear individual sounds within words and to manipulate those sounds, O'Connor, Jenkins, and Slocum (1995) have identified the most important of these tasks: blending sounds into words, listening to a word and segmenting the individual sounds, and identifying the first sound of words. These are all central tasks in all levels of HOMER's reading program.

6. Reading Success Predicts Academic Future

If you want to know a child's chances of graduating from high school, look at his or her third-grade reading scores. In a study conducted in 1998, Fletcher and Lyon found that 74 percent of children who read poorly in third grade were still struggling in ninth grade. In a 2012 report, sociologist Donald J. Hernandez (2012) found that children who lack good reading skills in third grade are four times as likely to drop out of high school as their counterparts who read competently. This confirms previous reports by the National Research Council and by Snow et al. (1998). An earlier study by Connie Juel (1988) shows that first-grade reading scores are one way to predict future reading scores. Clearly, what happens early not only matters—it matters a lot.

7. Kindergarten Readiness

We can take it back a step further: the level of literacy skills a child has when entering kindergarten is predictive of how well he or she will score on first-grade reading tests. It will come as no great surprise that children enter kindergarten with a wide range of reading skills, but you might find the extent of that range surprising. Some children have no experience reading and others are advanced readers. According to a joint position paper issued by the International Reading Association and the National Association for the Education of Young Children, it is not unusual to have a five-year ability range in a single classroom (Learning to Read and Write, 1998). Some children have the pre-reading skills of the average three-year old, while others read as well as an average eight-year old.

According to the National Center for Education Statistics, some children enter kindergarten already reading simple books, while only 66 percent of incoming kindergarten students can identify letters of the alphabet by name, and only 61 percent realize fundamental concepts of print, such as the fact that English print is read from left to right and top to bottom (White, 1995).

Especially for young children, the approach to teaching matters. Many children entering kindergarten have had no preschool experience. They need to sit still, follow instructions, and be part of a group; these experiences are all new to them. Preschool experience notwithstanding, we do know that children learn best when they are actively engaged in educational tasks. A position paper on school readiness by the National Association for the Education of Young Children (NAEYC) emphasizes the notion that "skills are most effectively learned and practiced when embedded in meaningful experiences" (School Readiness, 1995). Play-based learning is an ideal way to make learning meaningful for a child. The engagement with a game keeps children focused, attentive, and ready to learn.

8. Learning to Read Requires Ample Time for Review

Whenever an adult or a child needs to master a new skill, whether it's a foreign language, a musical instrument, or the alphabet, we know that practice is a necessary component. Our personal experience validates this notion, but now we have scientific research that confirms the need for repetition and review of new information to secure mastery of a subject.

In a paper written for the National Council for Curriculum and Assessment in Ireland, Geraldine French (2007) notes studies showing that problem solving and repetition actually strengthen neural pathways. Likewise, without practice, pathways become weaker. French (2007) also notes that when children are actively engaged in a task they are more likely to practice, more likely to be successful, and, in turn, more likely to gain mastery.

We know that a crucial goal for early readers is to move toward automaticity in sounding out words. The definition used by the NRP is instructive: "Automaticity involves the processing of complex information that ordinarily requires long periods of training before the behavior can be executed with little effort or attention" (National Reading Panel, 2000). That is what you are doing right now: reading these words effortlessly, which allows you to focus on the meaning of what you are reading. How does automaticity happen? The same way a concert pianist gets to Carnegie Hall: practice, practice, practice.

Practice creates success and success creates more success. According to a study by Connie Juel (1988), when given the choice of cleaning their room or of reading, almost all good readers wanted to read, while only 60 percent of poor readers selected reading as a preference. There is a close correlation between children who see themselves as strong readers and children who like to read (Musen, 2010). In effect, this means that good readers practice more and become even better readers, while poor readers avoid reading, and their skills, therefore, advance slowly. In one study, researchers

discovered that 45 percent of tested fourth graders lacked grade-appropriate reading fluency (White, 1995). Common sense and research tell us that comprehension depends on a child's ability to read with fluency (National Reading Panel, 2000).

This is why HOMER includes so many opportunities for children to practice and review. We also know that children need to read stories and texts that are within their skill range. Supplying children with short, decodable texts that they can read and reread is one way we encourage children to reach mastery, automaticity, and fluency. This results in the added bonus of children gaining self-confidence as readers.

9. Comprehension Requires a Strong Vocabulary and a Rich World of Prior Knowledge

More than reading fluency is needed for a child to advance from learning to read to reading to learn. By fourth grade, children are expected to read fluently. Now it is time to read in order to acquire information and to engage actively in the joys of literature. To be successful at this stage of reading, a child must have mastery of phonics as well as a rich knowledge base and a strong vocabulary. One reason for the well-documented fourth-grade slump is that too many children lack the background information and the vocabulary needed to engage in challenging texts. One study conducted by Walker, Greenwood, Hart, and Carta (1994) showed that young children who lacked vocabulary and language skills were poor readers who stayed poor readers as the years went by.

It is possible to think of three levels or tiers of vocabulary knowledge (Beck McKeown, & Kucan, 2013). The first tier is composed of words that are common to most children. This is the language children hear daily, the language children use when speaking. The second tier is composed of less-familiar words that we more often find via reading. These include rich alternatives for more common words. When you use stroll instead of walk or stupendous instead of great, you are making use of this higher, more enriched, level of vocabulary. Finally, there are words that are specific for particular contexts. When children learn about animals and discover the words predator and prey, they are engaging in this level of vocabulary development.

How can we help children learn words in the second and third tiers? The NRP points to several routes toward building strong vocabularies. Perhaps the most central idea is the need for repeated exposure to new words—especially in authentic contexts (National Reading Panel, 2000). This is why HOMER made a special point in *Discover the World* lessons to include rich vocabulary within meaningful context and to repeat key words.

Vocabulary acquired out of context, on the other hand, is not enough to make sure that a child has strong reading comprehension skills. Word lists and rote workbooks do not teach a child to own new vocabulary and, therefore, make connections and draw meaning from words. Dolores Durkin (1993) notes that reading comprehension is "intentional thinking during which meaning is constructed

through interactions between text and reader." In other words, when a child confronts a new text using vocabulary previously encountered in context, he or she is more likely to understand the full meaning of the text. As the NRP observes, this engagement means that the reader is not passive; rather, he or she brings prior knowledge and experience to a text (National Reading Panel, 2000). HOMER's *Discover the World* lessons are dedicated to increasing the general knowledge of young children. We intentionally created lessons that would not only be of interest to young children but would provide youngsters with a wealth of information that they will then "own" and can bring to new but related experiences.

We also agree with researcher William Teale (2010) that "young children must have systematic and sustained instruction in listening comprehension, oral language, and composing, as well as development of rich and varied content knowledge." Developing receptive and expressive language is one key to comprehension and to being able to express what you comprehend (Teale, 2010). The multitudinous opportunities to record ideas in HOMER certainly exist for the child's pleasure, but they also provide a way of encouraging a child to express articulately ideas sparked during a lesson or listening to a nursery rhyme, poem, or an original HOMER story.

This brings us to another important aspect of learning: working memory. When children listen to a lesson and then respond to questions, they are exercising their working memory. Recent studies show that a strong working memory is a vital component of a child's educational success. Indeed, one study (Alloway & Alloway, 2010) proves that working memory skills of a five-year-old are a better predictor of a child's literacy and numeracy skills at age eleven than IQ scores.

10. Critical Thinking and Connected Learning

The human mind is always working, always processing information, always coping with sensory and intellectual input—in other words, we are always thinking. Critical thinking refers to a particular kind of thinking that is intentional rather than automatic. Critical thinking is purposeful and active. Robert Ennis (1993) defines it as "reasonable, reflective thinking focused on deciding what to believe or do." What does this mean for young children? It means, in an age-appropriate way, asking them to reflect, analyze, synthesize, and creatively engage in what they are learning. It means presenting thought-provoking content and then encouraging young children to reflect on the meaning of such content. It means allowing them a chance to evaluate what they are learning to determine what is essential and what is tangential. It means giving them chances to organize, classify, and categorize information they are learning. It means asking them to have their own ideas and reflections. It means encouraging them to be active rather than passive learners. We know that critical thinking cannot be taught in isolation. However, it can be encouraged by presenting children with intellectually rich content that stimulates them to question, consider, and evaluate what they are learning.

One way to encourage critical thinking and intellectual involvement with educational content is to make connections between ideas that might seem counterintuitive at first. By building bridges between

nonfiction and fiction, by presenting tangential ideas along with sequential ones, we endeavor to create a strong connection between child and content while broadening a child's intellectual range and stimulating intellectual curiosity. When a child learns about owls and then reads the fable *The Owl and the Birds*, a link between fact and fiction is established. When a child also learns that a group of owls is called a parliament and is given a definition of this term, yet another opportunity to make unexpected connections opens up. At HOMER, we are always looking for ways to provide these creative connections because we know this leads to a deeper understanding of the world. We also know that this kind of connected learning can lead to stronger connections between a child and intellectual content.

11. The Importance of Exposure to Traditional Children's Literature

Bernard Schweizer (2009) described quizzing his class of college freshman to see if they had the background information needed to read an article on global warming. Just one out of fifteen students knew who Mahatma Gandhi was; none were familiar with the names Ernest Hemingway or Henry David Thoreau. Naturally, these are not people we expect young children to know, but there is a cultural heritage that we can and should make available to young children. Young children should know classic stories, nursery rhymes, fables, and fairy tales. They should know the story arc between "once upon a time" and "happily ever after." They should know classic fables so that when someone makes reference to a mouse saving a lion, they will know what that means. They should be familiar with such archetypical characters as the trickster, the foolish youth, and the generous of heart. All of these character types appear in classic children's literature, and being familiar with these archetypes and the roles they play primes children for understanding the same character types when they appear in books for older children, for high school students, for college freshmen, and for adults. Lucy Calkins, Mary Ehrenworth, Hareem Atik Khan, and Julia Mooney (2010) state this perfectly: "There are compelling reasons for students to become familiar with fairytales, folktales, fables, and myths. Readers who know these genres also know a lot about how stories go and about literary traditions." We want to expand the cultural base of our literature; we want to include classic stories rooted in many cultures. *Anansi the Spider* should be as familiar to young children as *Cinderella*. HOMER has an ever-expanding library of tales for children so that we can help youngsters gain a foundation in classic children's literature.

12. Conclusion

HOMER is grounded in academic research, but we always remember that we teach children, not theory. We design our games to engage children just as we design our scope and sequence to help children read and spell as swiftly as possible. We pride ourselves in placing the best practices for teaching reading within a child-centric world. We know that engagement is an essential ingredient for any program to succeed with young children, and so we always keep the child's experience foremost in our thinking as we design every aspect of HOMER.

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