

Reading Eggs Logic Model

Study Type: ESSA Evidence Level IV

Prepared for:
3P Learning

Prepared by LearnPlatform:
Andrew Scanlan, M.A., Researcher
Molly Henschel, Ph.D., Senior Researcher

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EXECUTIVE SUMMARY

3P Learning engaged LearnPlatform, a third-party edtech research company, to develop a logic model for Reading Eggs. LearnPlatform designed the logic model to satisfy Level IV requirements (*Demonstrates a Rationale*) according to the Every Student Succeeds Act (ESSA).¹

Logic Model

A logic model provides a program roadmap, detailing program inputs, participants reached, program activities, outputs, and outcomes. LearnPlatform collaborated with 3P Learning to develop and revise the logic model.

Research Plan for Reading Eggs Evaluation

Informed by the Reading Eggs logic model, LearnPlatform developed a research plan for a study to meet ESSA Level III. The proposed research questions are as follows:

1. To what extent did students use Reading Eggs during the 2022–23 school year?
 - What is the average number of lessons that students completed on the Reading Eggs platform?
 - On average, how many lessons did students complete upon their first attempt?
2. Does the average number of lessons that students complete on the Reading Eggs platform relate to improved performance on standardized ELA assessments?

Conclusions

This study provides results to satisfy ESSA evidence requirements for Level IV (*Demonstrates a Rationale*).

¹ Level IV indicates that an intervention should include a “well-specified logic model that is informed by research or an evaluation that suggests how the intervention is likely to improve relevant outcomes; and an effort to study the effects of the intervention, that will happen as part of the intervention or is underway elsewhere...” (p. 9, U.S. Department of Education, 2016).

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Introduction

3P Learning engaged LearnPlatform, a third-party edtech research company, to develop a logic model for Reading Eggs. LearnPlatform designed the logic model to satisfy Level IV requirements (*Demonstrates a Rationale*) according to the Every Student Succeeds Act (ESSA).

The study had the following objectives:

1. Define the Reading Eggs logic model and foundational research base.
2. Draft an ESSA Level III study design.

Previous Research. Literacy skills are vital for students' academic success through early years, college, and beyond (Castles, Rastle, & Nation, 2018). However, reading gains have plateaued and remained poor over many decades (Lowery, 2017). In the aftermath of the COVID-19 pandemic, reading performance in the U.S. has only declined further, especially for the lowest performing students (U.S. Department of Education, 2022).

Therefore, it is essential that evidence-based literacy interventions are provided as early as possible and as part of a multi-tiered support system to avert long-term negative consequences (Lowery, 2017; Swanson et al., 2017; Galuschka, Ise, Krick, & Schulte-Körne, 2014; Torgesen, 2004). Deficiencies in literacy skills, especially from an early age, can lead to negative academic outcomes (Cunningham & Stanovich, 1997), increased drop-out rates (Daniel et al., 2006), and negative mental health outcomes (Francis, Caruana, Hudson, & McArthur, 2019).

Reading Eggs provides a research-based, comprehensive online curriculum focused on improving literacy outcomes for students aged 4-13. It features hundreds of ready-made and self-paced lessons, activities, and resources that can be used to support all learners as an early intervention to prevent reading failure for students. Reading Eggs offers differentiated support to learners by offering baseline assessments and assigning learning paths that allow them to progress at their own pace. Each of 120 core reading lessons encompasses four or five key elements that research shows are crucial to effective literacy instruction: phonemic awareness, phonics, fluency, vocabulary, and comprehension (Pike, Turner, & Leman, 2010; Ambruster, Lehr & Osborne, 2000; National Reading Panel, 2000).

Phonemic awareness. Phonemic awareness provides children with the skills to link sound with letters, words, syllables, and phonemes and is critical for early literacy growth (Pike, Turner, & Leman, 2010). Research suggests that phonemic awareness should be prioritized in early literacy instruction with phonics instruction gradually replacing it in later years (Adams, 1994). Reading Eggs builds in a variety of phonemic awareness activities into its early lessons through engaging and purposeful activities like sound play, songs, rhymes, and listening activities. These activities are essential components of a successful and comprehensive reading program and are designed to develop readers' capability to understand a wide variety of texts (Yopp & Yopp, 2000; CCSSO & NGA, 2010).

Phonics. Reading Eggs uses a synthetic phonics approach to provide lessons that introduce children to letter-sound relationships in a purposeful sequence (Pike, Turner, & Leman, 2010; Ambruster, Lehr, & Osborn, 2000). These lessons include individual letter recognition, letter combinations, and matching sounds to letters. Each letter of the alphabet is given its own lesson which focuses on an element of core phonics skills like vowel and consonant sounds, word families, or double letter sounds (Pike, Turner, & Leman, 2010; Beck, 2006). Systematic phonics instruction is a key component of an effective literacy curriculum and builds on phonemic awareness to support children to read in the first two or three years of school (Pike, Turner, & Leman, 2010; Ambruster, Lehr, & Osborn, 2000).

Fluency. Fluency bridges the gap between word recognition and comprehension (Ambruster, Lehr, & Osborn, 2000). The ability to recognize sight words is an important element of increasing early fluency. The top 100 high frequency sight words comprise more than 50 percent of primary level texts. Understanding these sight words is vital to a child developing their literacy skills from an early age (Compton, 1997; Freebody & Byrne, 1988; Strickland & Morrow, 1991). The failure to focus on high-frequency sight words has been associated with reading difficulties, especially with early readers (Byrne, Freebody, & Gates, 1992; Ehri, 1991). Reading Eggs provides a library of over 3,000 e-books, each designed to meet a child at their reading level from the earliest ages, build on prior knowledge, and encourage growth in fluency through a variety of engaging content.

Vocabulary. A larger vocabulary is associated with stronger reading comprehension, especially for second language English speakers (Stahl & Fairbanks, 1986). Reading Eggs promotes vocabulary development by providing visuals with words placed in their context. (National Reading Panel, 2000). Each learning map includes sequential and iterative lessons that build student achievement in spelling, grammar, and vocabulary. Students also have the opportunity to apply learned vocabulary by creating their own stories using Reading Eggs's Story Factory.

Comprehension. Research shows that comprehending text and reading for meaning is one of the core tenets of a successful, comprehensive literacy curriculum (National Reading Panel, 2000). Each Reading Eggs lesson introduces a topic and contains iterative activities that encourage students to build on their prior knowledge before extending understanding by recommending a new book or story at the end of each lesson. Students are encouraged to answer questions on the text that dig deeper into a story's meaning. Literacy curricula that include opportunities for students to build comprehension beyond just recognizing the meaning of text, like Reading Eggs, have been shown to increase student motivation and academic achievement (Ambruster, Lehr, & Osborn, 2000; Guthrie, Wigfield, Metsala, & Cox, 1999; Guthrie & Wigfield, 1997).

To be most effective, literacy curricula should include a focus on each of the above elements while providing instruction that is motivating, fun, and engaging. Such programs have been found to be crucial for increasing the time that students remain on task and improving student outcomes (Taylor & Aldeman, 1999; Schiefele, 1991). Reading Eggs provides a rich variety of motivational and fun elements including hundreds of interactive games, videos, puzzles, songs, and activities to support literacy growth as well as rewards.

Taken together, the literature shows that comprehensive literacy curricula that include a focus on phonemic awareness, phonics, fluency, vocabulary, and comprehension are most effective for improving student literacy outcomes. Reading Eggs is an online literacy curriculum founded on these ideas and that allows students to progress at their own pace through fun and engaging content, activities, and rewards. As reading gains nationally have decreased, especially for students in most need, Reading Eggs provides a research-based literacy intervention tool that can reach students needing additional support and begin to narrow literacy gaps.

Logic Model

A logic model is a program or product roadmap. It identifies how a program aims to impact learners, translating inputs into measurable activities that lead to expected results. A logic model has five core components: inputs, participants, activities, outputs, and outcomes (see Table 1).

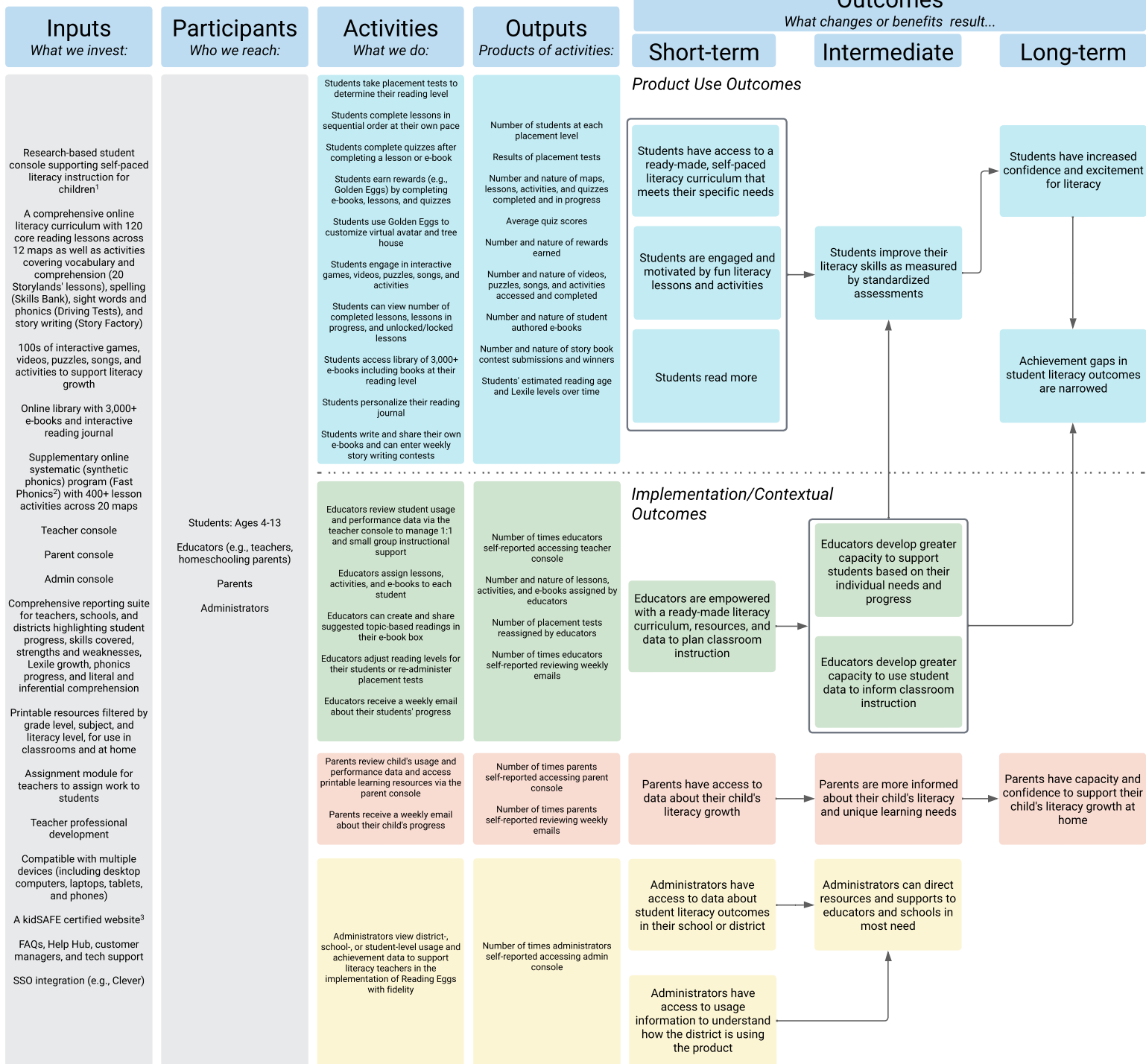
Table 1. Logic model core components

Component	Description	More information
Inputs	What the provider invests	What resources are invested and/or required for the learning solution to function effectively in real schools?
Participants	Who the provider reaches	Who receives the learning solution or intervention? Who are the key users?
Activities	What participants do	What do participants do with the resources identified in Inputs? What are the core/essential components of the learning solution? What is being delivered to help students/teachers achieve the program outcomes identified?
Outputs	Products of activities	What are numeric indicators of activities? (e.g., key performance indicators; allows for examining program implementation)
Outcomes	Short-term, intermediate, long-term	<p>Short-term outcomes are changes in awareness, knowledge, skills, attitudes, and aspirations.</p> <p>Intermediate outcomes are changes in behaviors or actions.</p> <p>Long-term outcomes are ultimate impacts or changes in social, economic, civil or environmental conditions.</p>

LearnPlatform reviewed Reading Eggs resources, artifacts, and program materials to develop a draft logic model. 3P Learning reviewed the draft and provided revisions during virtual meetings. The final logic model depicted below (Figure 1) reflects these conversations and revisions.



Problem Statement: Early literacy skills are the strongest predictor of success in school, so it's important to meet the unique literacy needs of all students in their first years of schooling. This can be a challenge for early elementary teachers because of limited time and budgets. Providing effective supplemental, self-paced literacy support is often costly, time consuming, and doesn't come early enough. For students aged 4-13, Reading Eggs provides a comprehensive and highly motivational online literacy curriculum. It features hundreds of ready-made and self-paced lessons, activities, and resources that can be used to support all learners, support children at risk, and as an early intervention to prevent reading failure.



¹3P Learning recommends that students use Reading Eggs for a minimum of 2 times a week for 20 minutes each session.
²Fast Phonics is an online systematic, synthetic phonics program designed for emergent and early readers as well as older students with gaps in their core reading knowledge. Fast Phonics is a supplementary component of Reading Eggs.
³A kidSAFE certified website means that the product has been independently reviewed, certified, and/or listed by kidSAFE to meet certain standards of online safety and/or privacy.

Figure 1. 3P Learning's Reading Eggs Logic Model



Reading Eggs Logic Model Components. 3P Learning invests several resources into Reading Eggs, including a research-based student console supporting self-paced literacy instruction for children²; a comprehensive online literacy curriculum with 120 core reading lessons across 12 maps as well as activities covering vocabulary and comprehension (20 Storylands lessons), spelling (Skills Bank), sight words and phonics (Driving Tests), and story writing (Story Factory); 100s of interactive games, videos, puzzles, songs, and activities to support literacy growth; an online library with 3,000+ e-books and interactive reading journal; a supplementary online systematic (synthetic phonics) program (Fast Phonics³) with 400+ lesson activities across 20 maps; teacher, parent, and administrator (admin) consoles; a comprehensive reporting suite for teachers, schools, and districts highlighting student progress, skills covered, strengths and weaknesses, Lexile growth, phonics progress, and literal and inferential comprehension; printable resources filtered by grade level, subject, and literacy level, for use in classrooms and at home; an assignment module for teachers to assign work to students; teacher professional development; compatibility with multiple devices (including desktop computers, laptops, tablets, and phones); kidSAFE certification⁴; frequently asked questions (FAQs), a Help Hub, customer managers, and tech support; and single sign-on (SSO) integration (e.g., Clever).

Ultimately, the Reading Eggs program aims to reach students aged 4-13, educators (e.g., teachers, homeschooling parents), parents, and administrators. Using these program resources, the aforementioned participants can engage with the Reading Eggs platform in the following activities:

- **Students:**
 - take placement tests to determine their reading level;
 - complete lessons in sequential order at their own pace;
 - complete quizzes after completing a lesson or e-book;
 - earn rewards (e.g., Golden Eggs) by completing e-books, lessons, and quizzes;
 - use Golden Eggs to customize a virtual avatar and tree house;
 - engage in interactive games, videos, puzzles, songs, and activities;
 - can view number of completed lessons, lessons in progress, and unlocked/locked lessons;
 - access a library with 3,000+ e-books including books at their reading level;
 - personalize their reading journal; and
 - write and share their own e-books and can enter weekly story writing contests.

- **Educators:**
 - review student usage and performance data via the teacher console to manage 1:1 and small group instructional support;
 - assign lessons, activities, and e-books to each student;

² 3P Learning recommends that students use Reading Eggs for a minimum of 2 times a week for 20 minutes each session.

³ Fast Phonics is an online systematic, synthetic phonics program designed for emergent and early readers as well as older students with gaps in their core reading knowledge. Fast Phonics is a supplementary component of Reading Eggs.

⁴ A kidSAFE certified website means that the product has been independently reviewed, certified, and/or listed by kidSAFE to meet certain standards of online safety and/or privacy.

- can create and share suggested topic-based readings in their e-book box;
 - adjust reading levels for their students or re-administer placement tests; and
 - receive a weekly email about their students' progress.
- **Parents:**
 - review child's usage and performance data and access printable learning resources via the parent console, and
 - receive a weekly email about their child's progress.
- **Administrators** view district-, school-, or student-level usage and achievement data to support literacy teachers in the implementation of Reading Eggs with fidelity.

3P Learning can examine the extent to which core activities were delivered and participants were reached by examining the following quantifiable outputs:

- number of students at each placement level
- results of placement tests
- number and nature of maps, lessons, activities, and quizzes completed and in progress
- average quiz scores
- number and nature of rewards earned
- number and nature of videos, puzzles, songs, and activities accessed and completed
- number and nature of student authored e-books
- number and nature of story book contest submissions and winners
- students' estimated reading age and Lexile levels over time
- number of times educators, parents, and administrators self-reported accessing teacher, parent, and admin consoles
- number and nature of lessons, activities, and e-books assigned by educators
- number of placement tests reassigned by educators
- number of times educators and parents self-reported reviewing weekly emails

If implementation is successful, based on a review of program outputs, 3P Learning can expect the following outcomes. In the short term, students will have access to a ready-made, self-paced literacy curriculum that meets their specific needs. They'll be encouraged to read more while being engaged and motivated by fun literacy lessons and activities. Educators will be empowered with a ready-made literacy curriculum, resources, and data to plan instruction. Parents will have access to data about their child's literacy growth. Similarly, administrators will have access to data about student literacy outcomes in their school or district and have access to usage information to understand how the district is using the product.

In the intermediate term, students will improve their literacy skills, as measured by standardized assessments. Educators will develop greater capacity to support students based on their individual needs and progress as well as be able to develop greater capacity to use student data to inform classroom instruction. Parents will be more informed about their child's literacy and unique learning needs while administrators can direct resources and support to educators and schools in most need.

Long term, students will have increased confidence and excitement for literacy, and as a result, achievement gaps in student literacy outcomes will narrow. Parents will also have the capacity and confidence to support their child's literacy growth at home.

Study Design for Reading Eggs Evaluation

To continue building evidence of effectiveness and to examine the proposed relationships in the logic model, 3P Learning has plans to conduct an evaluation to determine the extent to which Reading Eggs produces the desired outcomes. Specifically, 3P Learning has plans to begin an ESSA Level III study to answer the following research questions:

1. To what extent did students use Reading Eggs during the 2022–23 school year?
 - What is the average number of lessons that students completed on the Reading Eggs platform?
 - On average, how many lessons did students complete upon their first attempt?
2. Does the average number of lessons that students complete on the Reading Eggs platform relate to improved performance on standardized ELA assessments?

Conclusions

This study satisfies ESSA evidence requirements for Level IV (*Demonstrates a Rationale*). Specifically, this study met the following criteria for Level IV:

- ✓ Detailed logic model informed by previous, high-quality research
- ✓ Study planning and design is currently underway for an ESSA Level I, II or III study

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