Ignite by Hatch™ ESSA Evidence Packet

LXD Research Hatch Early Learning

"Educators and researchers continue to uncover important insights about how people learn. Digital Promise's Research-Based Design Product Certification recognizes the educational technology products that incorporate research about learning into their design and development. Congratulations to Hatch Early Learning for demonstrating that research informs product design!"

—Christina Luke Luna, Chief Learning Officer, Digital Promise

UNDERSTANDING

ESSA Evidence

Evidence requirements under the Every Student Succeeds Act (ESSA) are designed to ensure that states, districts, and schools can identify programs, practices, products, and policies that work across various populations.

ESSA requires education programs to provide evidence of effectiveness and impact in order to be federally supported. The U.S. Department of Education's Office of Educational Technology provides standards to assess the varying levels of strength of research for education products.

The following are the categories for ESSA Evidence are: strong, moderate, and promising evidence of effectiveness, or demonstrates a rationale to be effective.

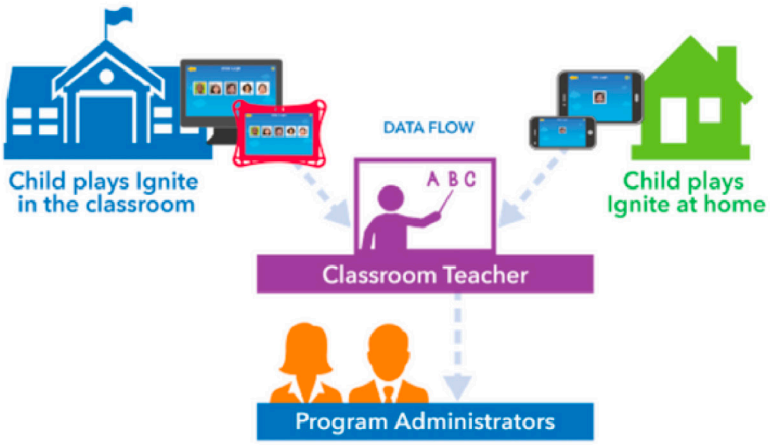
This study meets the requirements for Level 3: Promising

- ✅ Correlational design; students with less progress in the program compared to students with more progress in the program
- ✅ Proper design and implementation with at least two teachers, 30 students per group, and a form of a program that could be replicated
- ✅ Statistical controls through covariates; the model also accounted for child age and months during the academic year in which Ignite was played
- ✅ At least one statistically significant, positive finding

October 2023

Standards-Based, Research-Backed Technology

Hatch™ prepares early learners for success by creating play-based technologies that engage and instruct children while providing teachers with data and curricular experiences to help each child succeed.



Flexible Implementation

Ignite was built to work in any scenario-wherever learning takes place!

You can feel confident that Ignite supports children wherever they are learning because we are constantly making improvements based on research, best practices, and feedback from users like you!

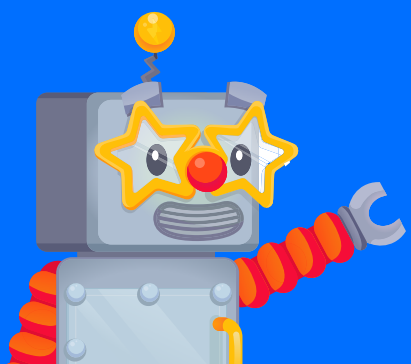
Ignite Learning With a Whole-Child Approach

Ignite is a digital learning platform anchored in a child-facing app that delivers engaging, researchbased learning experiences through a dynamic digital-play environment.

In as little as 30 minutes of independent, purposeful practice per week, children make meaningful progress towards their school-readiness goals.

Through a rich data dashboard, teachers and administrators are provided with real-time data to inform daily individualized instruction and evidence for developmentally appropriate assessment systems.

www.hatchearlylearning.com



- Social Emotional
- Physical
- Language & Communication
- Literacy
- Mathematics
- Science & Technology
- Social Studies

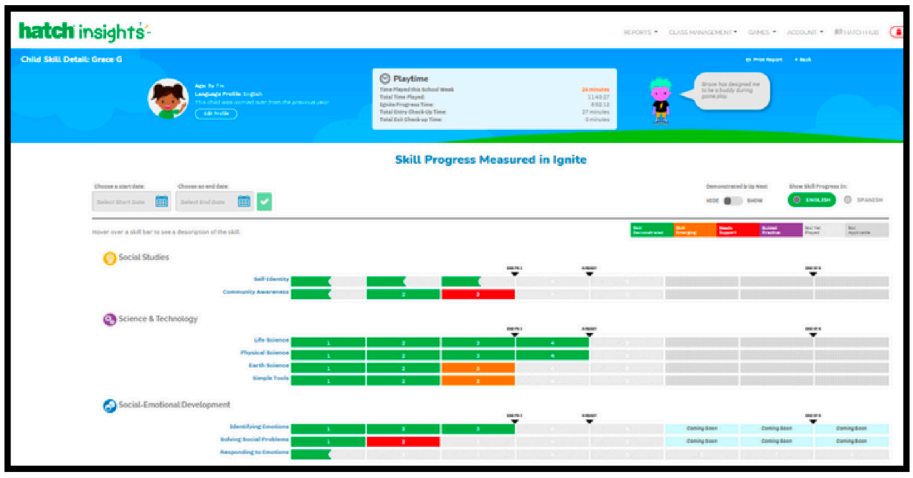
Ignite Instructional Approach

Children's Ignite Experience:

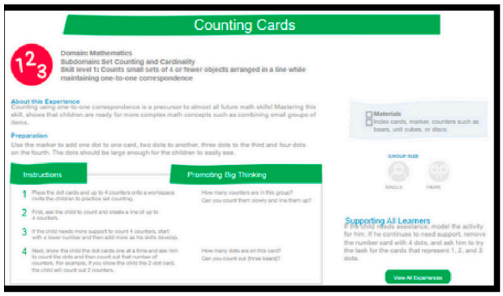
1. **Core Experiences** assess development in each domain to provide ongoing data to teachers, administrators, and families. Children must demonstrate at least 80% accuracy in each instructional experience to move to the next skill or domain.
2. **Guided Practice** provides instructional support to develop skills across all learning domains. The instructional support follows a gradual-release model in an "I Do, We Do, You Do" format.

First, children receive a Core Experience. If they demonstrate 80% mastery, they progress to the next level Core Experience.	**Core Experience Level 1**	**Core Experience Level 2**
If they do not reach 80% mastery, children are given an alternate version of the same Core Experience after a 36-hour delay.	**Core Experience Level 1**	**Alt. Core Experience Level 1**
If children do not demonstrate the skill in the alternate Core Experience, they progress to **Guided Practice.** Then, they see the original Core Experience for the third time.	**Guided Practiced** **I Do → We Do → You Do**	**Core Experience Level 1**

Teachers' Ignite Experience: Teachers can view children's progress in the data dashboard.



If children need support in any specific domain, teachers can access the **Curricular Experiences,** which include short comprehensive lesson plans to target specific skills and accelerate children's learning.



"Ignite by Hatch is a wonderful learning tool! The children get their own personal experience at their own rate. As they master skills, Ignite moves them on, but if they're not able to, Ignite has Guided Practice that gives them the material with more practice until they are able to move on to the next level. Ignite does not just drop the children—I can go back a week later and that child has mastered that skill and moved up a level."

—Janie Smith, MEd, Head Start Education Coordinator, Caddo Community Action Agency

"At Hatch, we consider the learning sciences in each design decision we make. Research is at the center of the products we design, and we continuously iterate based on feedback from the classroom. We believe that with research, we can support all children in becoming closer to kindergarten readiness."

—Naomi Polinsky, Director of Research, Hatch Early Learning

Ignite Summary of Research Basis

- Game-based learning that allows children to make mistakes, experience disappointment, accomplish goals, interact with novel ideas, and reflect on their experiences can support children's learning, provide a highly engaging learning environment, and motivate children with different learning preferences.
- Scaffolding, or the provision of adult support to learn a novel and advanced skill, is a critical component of the learning process for young children, and this support should be provided with the goal of leading children towards independence.
- Children remember information best when it is spaced out throughout content and not repetitively practiced in a sequence. This spacing is important because **information that is remembered is learned.**
- Based on the recommendation that children ages 3 to 6 have screen time for 2 hours a day or less, Ignite is designed to be played for only 30 minutes per week.
- To ensure that children are actively practicing skills and only engaging with more difficult skills when they are ready, Ignite implements a research-based mastery criterion that moves a child on to the next level only once they truly demonstrate mastery of a skill.
- The skills that children can practice by engaging with Ignite are based on the Common Core and other state standards, as well as the Head Start Early Learning Framework.
- Ignite is designed to provide teachers with insight and data into their students' learning and skill development because research shows that data-driven instruction can support improved student performance. Moreover, Ignite includes a web-based reporting and data system, designed to provide educators with straightforward, just-in-time data about their classroom as a whole or individual children.
- Research documents challenges posed by lesson planning and utilizing data in instruction to teachers. Ignite is designed to overcome these challenges by providing grouping suggestions and extension activities that can help fill gaps revealed by the data in children's skill development.
- Learning outcomes are strongest when there is a clear connection between the learning activities completed at school and at home. Ignite is designed to be used by children at home, and to further engage the family, data can be shared with parents that reveals strengths and challenges that children have.

Review the full paper online! Research Foundation: Ignite by Hatch

IGNITE EFFICACY STUDY

LXD RESEARCH ESSA Level 3 Evidence

SUMMER 2023

A CORRELATIONAL STUDY BETWEEN THE USE OF THE IGNITE EDUCATIONAL GAMING SYSTEM AND THE DEVELOPMENTAL STATUS OF YOUNG CHILDREN

PROGRAM DESCRIPTION

Ignite is a dynamic, adaptive learning platform that provides teachers with objective, standards-based documentation and scoring for children ages 28 months to 5 years old. The research-driven platform assesses learning and propels kindergarten readiness through the delivery of 170 sequenced skills.

STUDY DETAILS

The primary goal of this study was to examine the relationship between using the Ignite educational gaming system and assessments of the developmental status of young children participating in the Georgia DECAL summer program. To meet this goal, researchers collected data on the extent to which children engaged with Ignite, the skill levels they achieved in the Ignite system, and teacher ratings of children's literacy and mathematics skills. All data was analyzed by a third-party psychometrician.

IMPLEMENTATION DESCRIPTION

The summer program had 3,752 children engage with the Ignite educational system across seven domains of development and learning.

USAGE DESCRIPTION

On average, the summer program had 5 weeks of Ignite playtime, for a recommended playtime of 150 minutes.

ASSESSMENT DESCRIPTION

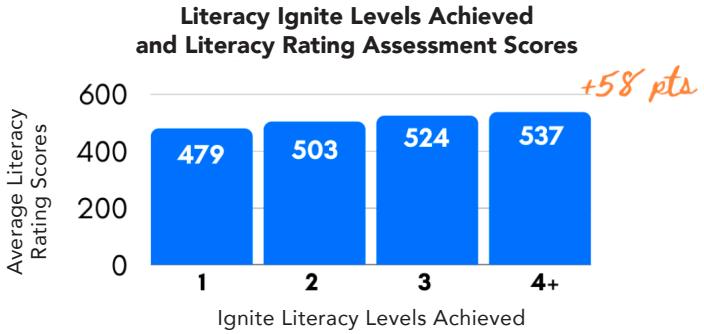
At the end of the summer program, teachers assessed children's mathematics and literacy skills using rating scales developed by Hatch researchers based on the GELDS (Georgia Early Learning and Development Standards).

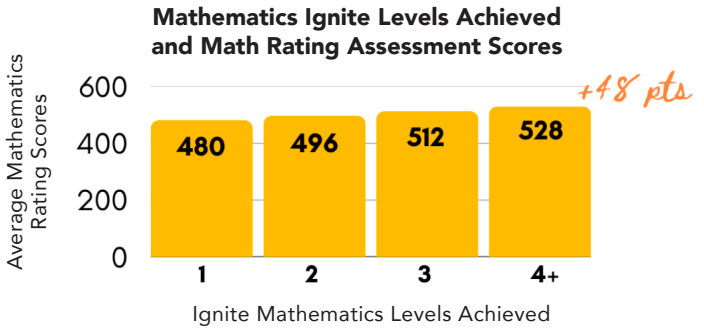
SCHOOL DESCRIPTION

PROGRAM: Georgia Dept. of Early Care and Learning
GRADE: Pre-K (ages 3-5)
SIZE: 3,752 children
DEMOGRAPHICS: All children's household incomes are equal to or less than 85% of Georgia's median income

KEY FINDING

Results revealed a positive connection between the levels children achieved in the Ignite educational system and their skills levels rated by teachers. For literacy and mathematics, there was a gain, on average, in assessment scores for every additional level achieved in Ignite. Children who achieved higher literacy levels in the Ignite educational system were rated by teachers as having stronger literacy skills (.126). Similarly, children who achieved higher mathematics levels in the Ignite educational system were rated by teachers as having stronger mathematics skills (.151).





LXD RESEARCH
ESSA Level 3 Evidence

Grade:
Pre-K

Location:
Large suburban district

Sample Size:
-3,750 children

Population:
Majority children of color

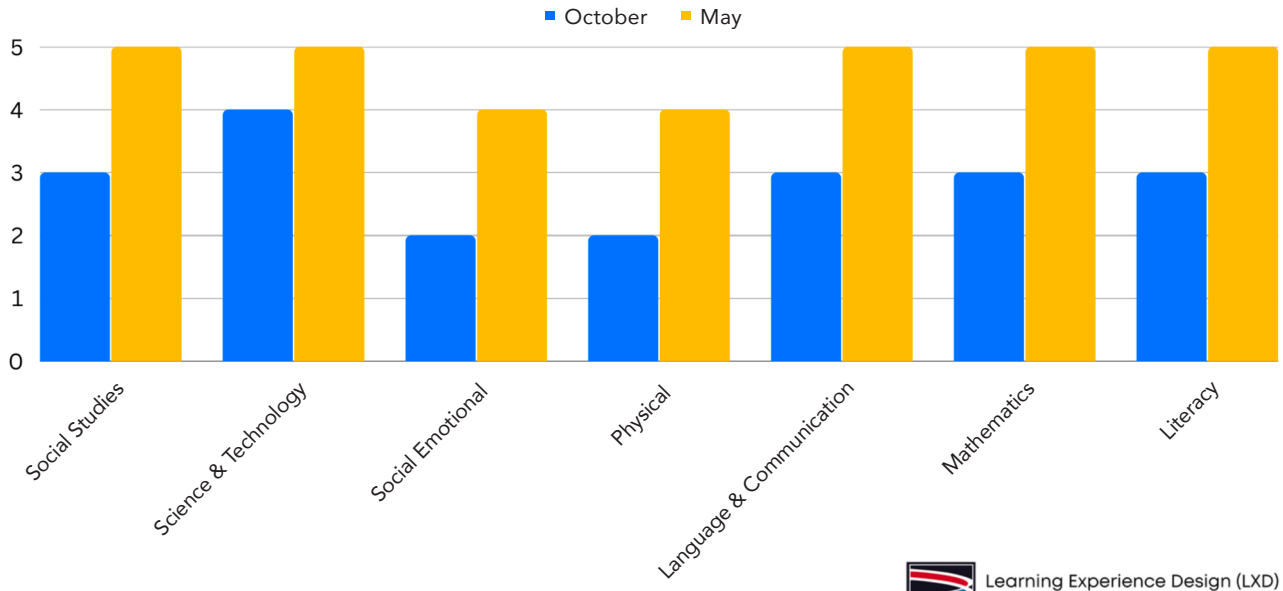
Ignite Implementation Summary

2020-2021

A Successful Implementation of Ignite in Pre-K Classrooms in One Large U.S. School District

The implementation of Ignite in this large, suburban pre-K program shows that Ignite has the power to transform student growth in a dynamic way. Even though the teachers and children in this case study were faced with difficult variables in the form of school closures and connectivity, most children in the district advanced at least one level across the academic year. Furthermore, researchers maintain that the vast majority of children engaged in Ignite (while at home at the end of the year) had achieved a level that was at or above the expected level for their age. This, in conjunction with the finding that children's pass ratings increased in correlation with increasing levels of play, supports the strong impact that Ignite has when implemented in the pre-K demographic. These levels of growth are even more profound when one considers the high volume of uncertainty that characterized the 2020-2021 school year for children across the country. It can be inferred that in a typical environment, without a global pandemic at play, children would have experienced even higher levels of growth and accelerated learning across all domains through engaging with Ignite.

Maximum Levels Achieved Over Time



LXD RESEARCH
ESSA Level 3 Evidence

Grade:
Pre-K

Location:
United States

Sample Size:
63,465 children

Population:
Nationally representative and diverse

Ignite Implementation Summary

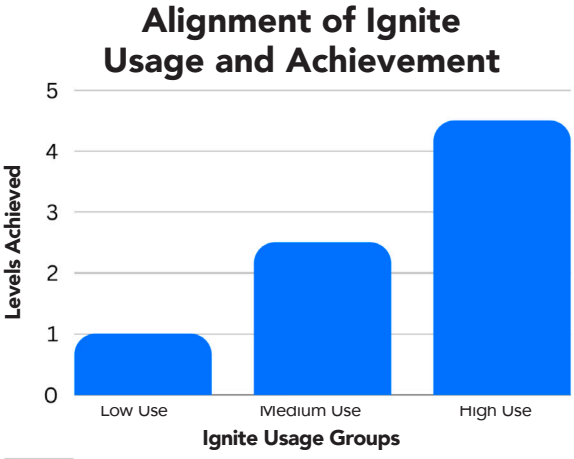
2021-2022

Executive Summary: Ignite Implementation Fidelity and Child Progress Report

The Ignite implementation guidelines suggest that children should engage with the educational system for 30 minutes per week on average. The primary goal of this study was to examine whether children who engage with the Ignite educational system for more time achieve higher levels. The second goal was to investigate whether more advanced levels in the Ignite system represent actual increases in difficulty. All data was analyzed by a third-party psychometrician.

The analyses were conducted using data from the entire nationally representative and diverse population of 3-, 4-, and 5-year-old children who used Ignite during the 2021-2022 academic year (N = 63,465). Children were divided into subgroups by usage levels. Low users used the Ignite system for less than 2 months and did not meet the 30 minutes per week recommendation. The medium-use group was defined as those children who used the Ignite system for 2-4 months and at least 30 minutes per week. The high-use group was defined as those children who used the Ignite system for at least 5 months and at least 30 minutes per week. A multiple regression analysis was used to determine whether a connection exists between the use of Ignite and the levels achieved in the educational system. Advanced psychometrics were used to measure the difficulty of the levels in Ignite to examine whether higher levels achieved are associated with increases in difficulty.

The multiple regression analysis revealed that more time spent and longer periods of usage in Ignite are associated with more levels completed in the educational system. Across all seven domains, the low-use group of children completed approximately one level on average, the medium-use group of children completed approximately two to three levels on average, and the high-use group of children completed approximately four to five levels on average.



In addition, the psychometric analyses of the difficulty of each level revealed that level difficulty progresses as intended. The analyses show that, for most of the games, 5-year-old children outperformed 4-year-old children, and 4-year-old children outperformed 3-year-old children. Moreover, very well-defined and sequenced developmental pathways emerged for all seven domains from Beginning to Proficient games with matching initial passing rates and game difficulty levels. For 90.7% of the games, 351 of the 387 games evaluated across the domains, the results demonstrated a close match between the intended skill level and the initial passing rates and game difficulty levels. Finally, a wide range of game difficulty levels, from easy to difficult, emerged for all seven developmental domains, such that children can be challenged and continue to grow, develop, and learn at all skill levels. This research demonstrates that time spent engaging in Ignite is associated with higher levels achieved and that as these levels are achieved, children are engaging with more complex, difficult tasks and topics.

Learning Experience Design (LXD) Research & Consulting
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Logic Model for Ignite

PROBLEM STATEMENT

Children come to kindergarten at varying degrees of readiness. Many preschool centers lack the resources to build children's skills in all the critical domains and provide the individualized assessment and instruction required to accelerate growth and prepare them for school.

RESOURCES

What resources are or could be available?

- Dedicated time for independent digital learning
- Teacher comfort, belief, and understanding of digital learning in the preschool setting
- Administrator support for teacher use of digital assessment to inform instruction
- Access to a device, such as a laptop or tablet
- Access to the Internet
- Access to a device and Internet at home (optional)

STRATEGIES AND ACTIVITIES

What will the activities, events, and such be?

- Structured, explicit, and sequential approach to teaching Science & Technology, Mathematics, Language & Communication, Literacy, Social Studies, Physical, and Social-Emotional learning skills
- Content with a structured and linear skill progression, using a mastery criterion for advancement
- Game-based, skill-specific practice opportunities with immediate feedback
- Guided Practice for children who have not yet demonstrated their understanding of skills
- A reporting dashboard to let teachers know what children have completed and learned and where they need additional support
- Data from Ignite that is automatically synced as documentation for Teaching Strategies GOLD users
- Offline resources to align with targeted teacher-led instruction

OUTPUTS

What are the initial products of these activities?

- Children have more practice with increasingly difficult skills across seven domains of learning
- With each additional month spent engaging with the system to fidelity, children will come closer to kindergarten readiness
- Children's engagement with skills across the seven domains extend to the home environment
- Children who are more challenged by specific skills receive meaningful, targeted instruction that promotes their continued achievement
- By leveraging data, teachers reduce the amount of time assessing children
- Teachers support students by providing targeted lessons that address specific challenges revealed by the system
- Teachers share skill-specific information with families about academic progress

SHORT-TERM AND INTERMEDIATE OUTCOMES

- Students transfer the skills they learn while playing on Ignite to classroom learning.
- Students more rapidly develop and deepen their early Literacy and Mathematics skills.
- Students improve their kindergarten readiness.
- Children's confidence in performing academic skills increases.
- Children are less likely to need intervention in kindergarten.
- Children increase their comfort in taking risks during learning.
- Teachers more successfully differentiate instruction for all learners.
- Educators save time on assessments to use to build relationships or support student learning goals.
- Administrators gain insights on how to better support teachers' practice.

ASSUMPTIONS

- There is administrator allowance of app and tablet use in the classroom.
- Children's learning is integrated and aligned with the in-person curriculum and is not an isolated experience.

LONG-TERM OUTCOMES AND IMPACTS

- Children develop a lifelong love of learning.
- Children confidently tackle new challenges across domains of learning.
- Educators increase the number of high-quality growth opportunities of the children in their classroom.
- Educators build more positive relationships with their children and families.
- The kindergarten-readiness gap between children who have different opportunity histories is narrowed.
- Children live to their full potential.
- Communities experience economic and social benefits of having youth with strong academic skills, such as a reduced drop-out rate, a more prepared workforce, and increased participation in democratic governance.

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