Ignite™

CONTENT VALIDATION STUDY

An Independent Field Test of Teacher Satisfaction

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Summary

Hatch® Early Learning, a provider of educational technology in the early learning field for the past three and a half decades, is committed to the importance of on-going, research based, product development. In an effort to improve the lives of the classroom teacher, Hatch is releasing a new teaching and assessment platform, Ignite by Hatch™. Ignite provides research-based, standards aligned, engaging interactive games for children 28 months through 5-years-old. On Ignite, children are able to play games and interact with individualized activities that support school readiness and a range of skills that prepare them for kindergarten. It offers each child activities that allow them to learn at their own pace, creating an individualized experience for each learner. It also provides teachers with objective data and documentation in real-time, saving teachers time and documenting each child's progress toward their specific targeted standards. The platform provides suggestions for hands-on experiences, outside of technology, strengthening the family's role in their child's learning, as well as on-going professional development opportunities for the teacher. This paper highlights the findings of field test teachers views on the alignment of Ignite game content to developmentally appropriate expectations for children 28 months through 5 years old. The goal of the study was to have classroom teachers review the content provided in the new child facing games and provide feedback on if they were of value, and if the 1-5 scale of targeted standards were appropriate for all children age 28 months through 5 years old. Several unaffiliated researchers devised the study, conducted the research, analyzed data, and developed the report.

Introduction

Multiple agencies and stakeholders use assessment information to determine the quality of their programs and to ascertain that children are making adequate progress toward critical learning and developmental goals. Unfortunately, in many cases, assessments that are used do not provide teachers and administrators the types of information that are most helpful in determining that children are indeed ready for school. The National Research Council, the National Association for the Education of Young Children, and the National Association of Early Childhood Specialists in State Departments of Education highlight the importance of assessment measures being developmentally appropriate, educationally important, and linguistically and culturally responsive. Assessment measures must also demonstrate acceptable properties of validity (National Association for the Education of Young Children & National Association of Early Childhood Specialists in State Departments of Education, 2003; Snow & Van Hemel, 2008).

Content validity, or how well a test measures the behavior it was intended to measure, is extremely important when looking at the effectiveness of an assessment. It is critical that the content included in Ignite accurately measures the constructs represented in the games. If the games, which children will spend up to 30 minutes a week playing, do not provide documentation and scoring based on the standards the games are aligned to, then the time spent playing the games and the output of the games is not valuable. It is important that Ignite provides teachers with content they can count on, so that they can focus their attention on teaching and building lasting relationships with the children in their class. Research suggests that learning occurs best in a supportive social context with high quality instructional practices that balance child- and teacher-directed learning activities. The teachers are tasked with the role of scaffolding, adjusting and adapting to the child's competencies, and the challenge of on-going observation. Young children benefit from well-designed developmentally appropriate educational and instructional technology (Haugland, S.W.2000).

It is well established that three- and four-year-olds need a whole-child approach, a strong cognitive development with a focus that attends to their social-emotional development to be ready for kindergarten. Technology has emerged that holds promise for children's early learning - and it is culturally appropriate to include technology into our early learning contexts to make learning more relevant and accessible to children and families. Technology is a significant part of society, it is an influence on children, and appropriate uses of technology can be good for children's learning. The use of educational technology has shown to have a positive impact on the social, emotional, language, and cognitive development of children.

Researchers recommend that many opportunities be given during the preschool years for exploration using technology tools in a playful, supportive environment. Researchers further agree that a number of technology applications have the potential to support and extend learning in the young child through their unique capability to provide excellent instruction in these important developmental areas that are critical for educational success (Murphy, K., DePasquale, R., and McNamara, E..20003).

Hatch, through on-going research, game development and testing, and studies in the field with teachers, created Ignite by Hatch. Children access the child facing games through a software app, which can be accessed through tablets or computers and play a series of games that measure their skill level, from beginning to proficient, across a series of games aligned to the latest kindergarten readiness standards. The games are expected to take anywhere from three to four minutes to complete and provide the child two choices on the skills they would like to work on. Once the child has completed a game, the documentation and scoring are shared with the teacher. This comprehensive platform is respectful of teachers' time, utilizing child facing technology to collect child data, so the teacher has on-going, objective data to make assessment decisions. It also provides experiences that can be dropped into a small group, or a one-on-one experience with a child, to ensure they are progressing as they should.

The developers of the content, experts in their respective specialties of early childhood, used the latest research and theory to develop the targeted standards for each game[1].

The Field Test

To ensure the games included in Ignite by Hatch are meaningful to teachers, a field test was conducted with 40 teachers and more than 500 children across three programs and eight sites. An assessment that is valid in content should *sufficiently examine all aspects that define the objective*. This paper focuses on field test teachers views on the alignment of Ignite game content to developmentally appropriate expectations for children 28 months through 5 years old.

The games in Ignite by Hatch are content-valid if they cover all topics aligned to Kindergarten Readiness, or basic skills required to be successful in Kindergarten, and state standards. Throughout the country, there are many definitions of Kindergarten Readiness. In an effort to align the games with Kindergarten Readiness, subject matter experts took the latest research and theory and aligned the targeted standards for each game with those expectations. Within the 1 to 5 scale for each game, level 4 represents Kindergarten Readiness. In order to ensure the content included in Ignite by Hatch child-facing games is valid, teachers evaluated the experiences that are provided in the games.

Experts in the field of early childhood created the content for the child facing games. Using the latest research and theory to create the experiences children will be exposed to in the games, as well as the 1 to 5 scale with targeted standards, and determine the Kindergarten Readiness point within each game. As with any content, it needs to be further tested in real classrooms by teachers to ensure it is measuring what it is intended to measure. One challenge teachers face with child facing technology, or games, is questioning the quality of the content in the experiences, if it is truly measuring those skills accurately, and if the information is useful, providing information they will use on an on-going basis to inform instruction and planning, to them. In this study, teachers were provided the experiences that are provided through the games, the scale with the targeted standards, and were asked if the experience was useful.

Participants

Despite its complexity, the qualitative nature of content validity makes it an accessible measure that should be taken into consideration when creating games. The three programs in the study, one Head Start, one public school, and one private school, also varied in geographic area, one being rural, one suburban, and one urban. The teachers ranged in their experience teaching, with some holding two-year training certificates, and others holding Bachelor of Education degrees. The sites varied in their allocated resources available to teachers. Some reported they didn't have many materials in their classroom, making it difficult to sometimes provide meaningful small group or one-on-one experiences. Other sites reported having access to resources but lacked the time to provide meaningful small group and one-on-one experiences for all the standards they are required to collect data on.

The teachers participated in a two-hour face to face training prior to providing the experiences to the children in their program. The training consisted of going over the experiences, which represent the content of the games, the 1 to 5 scale with targeted standards, and the manipulatives or materials needed to provide each experience.

Each participant was provided the list of materials below:

- Crayola Crayons Classic Jumbo
- Multicultural Crayons
- Colored Pencils
- Washable Markers
- Bright White Drawing Paper
- Crayola Multicultural Markers
- The Very Hungry Caterpillar Felt Kit
- Giant Horseshoe Magnet
- Weather Wheel Chart
- Snake Magnifying Glass
- Measuring Tape
- Listening Lotto Game Faces & Feelings
- Nursery Rhymes: Kid-Drawn Bulletin Board Set
- I Heard Your Feelings-Conversation Cards
- Spanish Alphabet & Picture Word Cards
- Jumbo Farm Animal Counters
- Brown Bear, Brown Bear, What Do You See?
- Healthy Lunch Game
- Healthy Kids
- 200 Pieces Round Math Counters Tub
- Feathers
- Things That Go Together Learning Cards
- Unifix Cubes
- Big Box of Alphabet Knowledge
- Foam Magnetic Learning Letters

The teachers were given 34 experiences to provide to the children in their 3 and 4-year-old classrooms over four weeks. Additionally, they were asked to record a score for each item, for each child in their class, on a 1 to 5 scale: Beginning, Emerging, Intermediate, Accomplished, and Proficient. The purpose of having them provide a rating, was to allow them to review the standards and how they progress from easiest to hardest and see if it aligns with the way children develop. These experiences represent the child facing games that children will complete each week. When the experiences are provided through the game, the duration of a single game typically ranges from 3-4 minutes and provides the teacher with a piece of documentation and a score. Additionally, they were asked to complete two surveys, one at the beginning of the field test and one at the end. They were also asked to rate each experience as helpful or not helpful, meaning accurately represents the targeted standards appropriate for children 28 months through 5 years of age.

The Findings

Teachers unanimously reported that the items were useful, meaning the content covered in the experiences represented curricular activities they are currently providing or would like to be providing in their classroom. The standard the experience aligns with was included in the experience description, and helped the teacher understand how the experience relates to the activities they are currently providing in their classrooms. When asked if the standards being measured were relevant, teachers reported yes, they are relevant to provide to this age group, and are experiences they are currently challenged with taking documentation and providing scores for on an on-going basis. When looking at relevance, they reported that they only teach certain experiences at certain times of the year, so the relevance of items will depend on the time of year. Teachers reported that the materials provided for the study were helpful in ensuring they had the appropriate resources to provide the experiences, but that the experiences did take time to produce. Many noted that if these experiences could be provided through child facing technology, it would solve two problems they currently face: resources in the classroom and time to provide the experiences.

Teachers also reported that the scale, 1 to 5 listing the targeted standards, were appropriate for children 28 months through 5 years old. On two occasions, teachers reported wanting additional targeted standards, asking for additional standards beyond the 1 to 5 scale, in order to best capture the skill levels of all the children in their class. Both experiences were in the literacy domain, and the teachers reported they had some children who were beyond Kindergarten Ready and would like to see the next targeted standard appropriate for them. Teachers were asked to examine the scale and the targeted standards that start with the beginning skill level and progress through proficient and report any issues with the scale.

The teachers provided scores on the 1 to 5 scale to each of the children in their classroom for each experience. This allowed each teacher to become familiar with the scale and see if it is appropriate for all the children in their class, including children with IEP's and dual language learners. Teachers reported the scale was appropriate for all the learners in their classroom. However, they found some of the targeted standards on the scale to be more granular than others. Content experts for Ignite confirmed this was intentional, with item difficulty playing a role in the skill levels represented between beginning and proficient.

Teachers also reported an additional benefit to having child facing technology in their classroom, the documentation and scoring it provides, based on how the child performs on the game. Sharing one of the biggest hurdles they currently face is finding enough time in the day to collect the required observations on the children in their class. Providing the experiences to the children in their class highlighted the value of having the games provide the documentation and scoring automatically, allowing them time to focus on other aspects of the children in their classroom development and learning.

Surveys and Teacher Comments

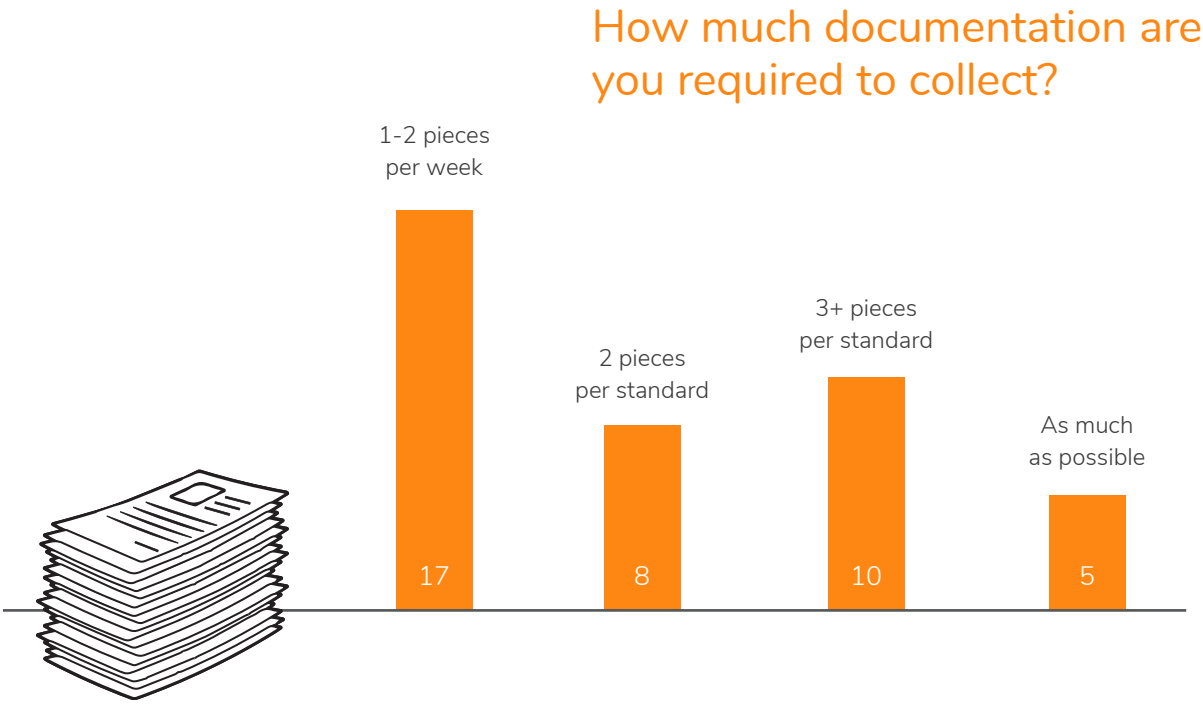
Teachers were asked to complete a survey at the training to gather some initial feedback on their experience with assessment and child facing technology. The surveys were provided at the end of the training and included 10 questions, which were both closed and open-ended. They were not asked to provide their name or classroom, to ensure they felt they could answer questions honestly. The answers provided highlighted the time commitment teachers currently feel around assessment, the need for a more objective data collection system, and the desire to have educational technology in the classroom that is reflective of how children will interface with technology in elementary school.

78%
of teachers described their current experience with assessment as ***negative***.

Of those that reported a negative experience, the responses ranged from, “All I do is assess my children,” to “I am expected to do multiple assessments, with limited resources, time, and professional development.” Others commented that their experience with assessment is that it is time consuming and adds little value. For those who responded positive, their answers ranged from, “Having access to resources that make the assessment more manageable is key” and “Understanding the standards required, help plan effectively.”

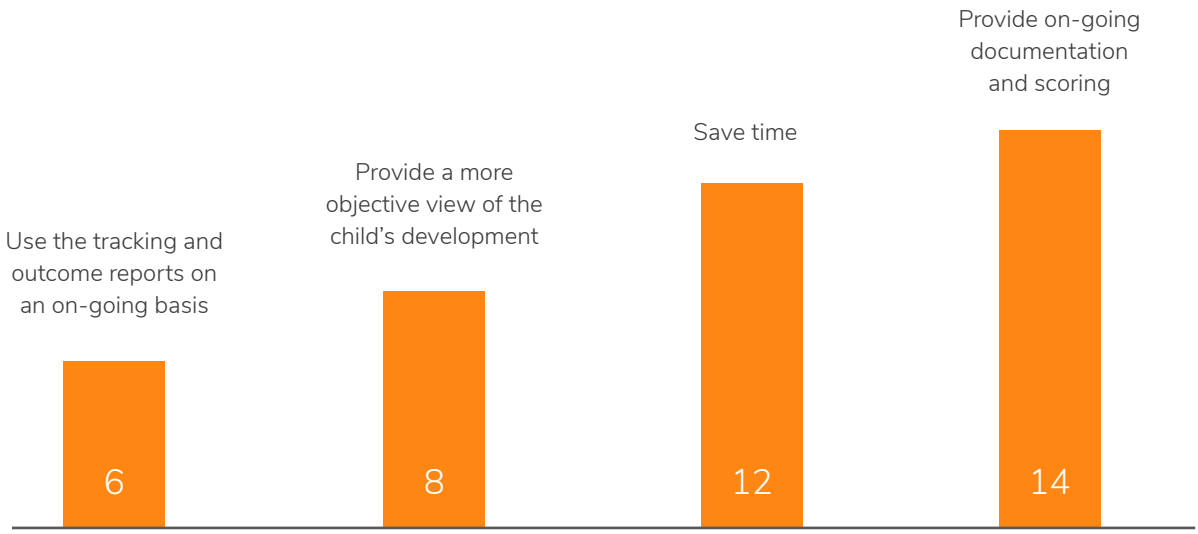
When asked what would make their current assessment experience easier, they all unanimously responded fewer items to assess would make the process easier. Some elaborated, saying that having fewer items to assess would provide the additional time needed to make meaningful assessment decisions and enable them to focus on the specific standards most important for Kindergarten Readiness.

All of the participating teachers reported that they are required to collect documentation, with many reporting that they are required to collect 2 pieces of documentation per child per week. Others responded they collect “Enough to understand how the child is developing,” with the majority replying “too much, more than there is time to collect.” A few reported “I’m not sure how much is required, but it’s never enough.“



When asked what their experience with child facing technology, or games was, the overwhelming response was positive. The majority of teachers shared “Children love technology, and it will be a big part of their future success.” Others shared “Providing engaging, developmentally appropriate content, is a win for teachers and children.”

How would having child-facing technology make assessment easier?



Post-Survey

Teachers were asked to complete an additional survey, including 10 questions, after providing the 34 experiences to the children in their classroom. The survey questions included: “How would having child facing games produce the data you collected through the experiences, be beneficial to you?” Participants unanimously reported that having these experiences provided through child facing games would be beneficial and would provide consistent and objective on-going data and documentation.

67%

of teachers ***already provide the same content*** as the child-facing games in their classrooms.

The majority of teachers reported the content already being delivered to the children in their classrooms, and that this would remove some of the burden of on-going assessment for them. For those reporting they do not provide this content currently, they did feel it would be beneficial to have this assessment information and would help them produce more objective assessment scores. When asked what changes they would make to the content, teachers reported they would like to see some minor edits to the developmental scale and clarifications to the content to better understand the skills to be measured.

Teachers also noted that the experience to measure the relationship between nutrition, health and learning is too easy for older 4 and 5-year-olds. They also reported pulling together individual sounds or syllables within words to be more difficult than other developmental progressions. This feedback was provided to the content team, ensuring changes could be made.

Teachers reported finding the scale, 1 to 5, easy to use, and liked that it was consistent across all items. They added that it was easy to identify Kindergarten Readiness, something they had struggled to identify in other assessments.

100%

of teachers found the scale ***developmentally appropriate*** for all experiences.

Conclusion

Ignite by Hatch provides teachers with valid content, a scale with developmentally appropriate targeted standards, and the opportunity to collect on-going objective documentation. Teachers reported unanimously that this platform would make their assessment process more meaningful. Many classrooms lack the required resources to provide experiences related to each standard but are still required to collect assessment data on the standards. Teachers might be able to provide a more equitable experience if they are not required to have all the resources associated with delivering each experience. The interactive nature of the Ignite technology will make required manipulatives or materials less critical in collecting objective documentation and scoring.

Ignite provides children with standards aligned experiences, but does not require the materials that were provided in the study, to collect meaningful documentation and scoring. Having teachers review and use the content with the children in their classrooms helps ensure the experiences provided through the games and the targeted standards they cover are valuable to teachers. When asked what changes or edits they would like to see in the platform, teachers reported wanting more of the hands-on activities, and to make it easy for them to insert them into their lesson plans. They would like to see an alignment between the experiences the games provide and the standards they are required to collect. Given the amount of documentation each teacher is required to collect, they would like to have a clear guide on how much documentation the games will provide them, and how often it is provided. Almost all of the teachers, 92%, reported wanting Hatch to continue to make assessment more meaningful for teachers by expanding on their offerings.

Hatch has committed to this on-going research and providing their customers with the outcomes of these studies and continuing to make the changes necessary to ensure the highest quality product.

References

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Endnotes

1. Content creation for Ignite included Literacy and Language expert Susan B. Neuman, ED.D.,Math expert Colleen Uscianowski, Ph.D., Dual Language expert Kelly Vaughn, Ph.D., Cognitive and Literacy expert Catherine Miller, Ph.D., and Educational Technology expert Amelia Swabb, M.A. The inclusion of reviewers like Dr. Sean Durham, Ph.D. Auburn University, specializing in curriculum development, is critical to ensuring the study is appropriate, and the outcomes are meaningful for teachers and children.