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Launching a Leveled eBook: Assessing the Market Opportunity and Developing a Business Model

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Launching a Leveled eBook: Assessing the Market Opportunity and Developing a Business Model

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Background

Overview of WGBH

WGBH is a Boston-based public media broadcaster and producer. It is PBS's largest producer of television and web content, producing such popular shows as Frontline, Nova, Curious George, and Arthur.

Overview of WGBH Education Division

The Education division operates as a distinct operating unit, separate from the production groups of the shows that WGBH produces. Its purpose is to extend WGBH brands into the classroom. To do so, the organization leverages WGBH assets to develop products and services that serve the needs of the education sector. There are two main groups within WGBH Education: *Productions* and *Outreach*. The productions group focuses on producing or repurposing media assets and developing them into educational resources. The outreach team leverages WGBH assets to provide resources for educational experiences in informal learning environments and to educate communities about important social issues (e.g. obesity).

Education Productions Core Business Lines

Over the past twenty years, WGBH Education Productions group has successfully launched four major education media products, all targeted at classroom teachers, primarily in K-12 and higher education.

Telecourses: In partnership with leading academics, WGBH developed a series of full-length multimedia materials (15-30 minute videos) as part of video-based courses that teach concepts in various subjects such as foreign language, history, social studies, and science. The project was funded by the Annenberg Foundation and distributed via universities and www.learner.org.

Documentary-Based Curriculum Resources: WGBH repurposed various PBS-funded documentary miniseries (e.g. The Machine that Changed the World) for classroom use. WGBH partners, PBS and McGraw Hill sold the videos along with complementary textbooks and teacher guides.

Professional Development: This includes *video libraries* that consist of videos illustrating classroom best practices for teaching a specific subject such as science, math, reading, and social studies. Viewing guides help the viewer understand the concepts being taught. *Online courses* offer teachers the opportunity to study teaching practices and obtain credits that meet required professional development mandates.

Teachers Domain (TD): Launched in 2001, Teachers Domain was WGBH's early entry into the digital education content space. Leveraging the internet and WGBH's robust media library and archive, WGBH Education began delivering short-form open education resources to aid teachers in teaching subjects including science, math, and social studies. *Teachers Domain Professional Development*, designed to complement TD, offers a series of online professional development courses for teachers.

Evolving Education Technology (Edtech) Ecosystem

While WGBH has been a leading multimedia education provider for the past two decades, the evolving education technology landscape poses new and significant challenges to their business. Recent changes in the education industry, including increased competition from both new entrants and established players and more constrained funding streams present significant challenges to the sustainability of the WGBH Education division.

Some of WGBH's traditional strategic partners no longer rely upon WGBH's media and curriculum design expertise. For example, Houghton Mifflin was one of WGBH's early partners in the development and distribution of its telecourse products. However, publishers like Houghton Mifflin have the capabilities to produce media in-house and digital products have gone from being supplemental to their core textbook business to being core to their survival.

Similarly, funding partner dynamics have changed. Multi-million dollar, multi-year grants are less common. Additionally, funders are demanding measurable impact and directing funds to new, innovative products and business models. There is also increased competition for funds as more start-up companies, nonprofits and social enterprises enter the education technology market. Within this changing landscape, WGBH is seeking ways to remain attractive to funders while also exploring new revenue-generating alternatives.

Topic Introduction

The initial question for this project was to help WGBH understand this evolving landscape and provide recommendations for how to strategically leverage their assets in this new context. As the project progressed, it took a more narrow focus. In response to the wide adoption of the Common Core State Standards, WGBH Education identified an opportunity to support teachers in meeting the literacy demands outlined by these standards. Ultimately, WGBH wanted to explore the market opportunity for launching an eBook that provides nonfiction leveled essays to teachers. The customer problem, product concept, and target customer are outlined below.

Customer Problem: Teachers need grade-level appropriate informational text resources that also enable them to teach the same content to all their students. Since students in a single class are often at different reading levels, teachers are not always able to use the same content. This problem is particularly relevant to science and social studies teachers who, prior to the Common Core, were not expected to help develop student literacy skills.

Product Concept: Nonfiction, informational essays on science and social studies topics at seven levels of reading ability

Target Customer: US public school teachers of middle and high school science, social studies, and English Language Arts (ELA)

To investigate this opportunity, this study sought to answer two key questions:

- 1) Should WGBH develop a leveled eBook product?
- 2) If so, how should they Go-To-Market?

Answering the first question required investigating:

- *Market Context:* What broader changes in the education market are creating an opportunity for this product?
- *Customer Need and Satisfaction:* Do teachers have a need for a digital product that offers leveled, informational text essays? If so, do existing offerings fulfill teacher needs?
- *Organizational Capabilities:* What capabilities are needed to develop the type of product teachers need? Does WGBH have such capabilities can they acquire them?

This report provides insight into the *market context*. It then offers findings and recommendations for developing a business model—potential target customer(s), implications for product design, and a go-to-market plan. Recommendations are based on findings concerning *customer need and satisfaction*. Lastly, it outlines potential risks for WGBH to consider if they proceed with this initiative. An assessment of operational capabilities and a financial model evaluating profit-making potential are not included, but this would be a necessary next step for determining whether this product is worth pursuing.

Executive Summary

WGBH has identified an opportunity to capitalize on four forces in the education sector: the Common Core State Standards, the need to improve student literacy, political interest in digital learning, and increasing technology adoption in schools. Together, these forces have created an environment conducive to WGBH's product concept of a digital product with leveled essays.

Customer interviews confirmed that there is demand for such a product. Teachers generally articulated a need for leveled content. Middle school science teachers not only need leveled science content, but they are also dissatisfied with their existing options. English Language Arts teachers, however, seemed less dissatisfied with their options for differentiation. There are also more products in the market to serve them. Fewer products exist for science teachers, and the ones that do target them are not necessarily meeting their needs. WGBH has the opportunity to create a compelling product that fills this gap.

The most important attribute for such a product will be engaging content that is relevant to the concepts science teachers are planning to teach. Leveled essays will only be attractive to teachers if they meet this baseline criterion.

WGBH has four potential Go-To-Market strategies it could pursue if it chooses to develop this product. As the product is currently conceived, a Direct-to-Teacher Model is most appropriate. While this approach provides an opportunity to explore an underdeveloped channel, it will require substantial marketing to make teachers aware that the product exists and to encourage them to try it. Given this potential challenge, WGBH should also explore content distribution partnerships with leading literacy and lesson planning platforms.

Altogether, these findings inform key elements of the potential business model for a leveled eBook. However, because the findings are based on a limited set of customer interviews, they require additional investigation to confirm their validity. Additionally, WGBH should explore two other factors before launching the product—their internal capabilities to produce such a product and the profitability of this product segment. These next steps will help WGBH best determine whether and how to pursue this market opportunity.

Market Context

There are four factors in the market that are creating positive market conditions for digital content and instructional products—the adoption of the Common Core State Standards; persistently low and varied student literacy levels, particularly among racial minority and low-income students; the aggressive promotion of digital learning by policymakers; and the increasing technology investments of schools.

Common Core

The Common Core is a set of standards that outline the concepts and skills that students should develop at every grade level for math and English Language Arts (ELA). The ELA standards establish expectations of student literacy along the dimensions of reading, writing, speaking, listening and language.¹ The standards also explicitly call for teachers to use informational text in developing student literacy skills.

In addition to establishing higher literacy expectations for students, the Common Core has extended these expectations beyond ELA to science and social studies. Consequently, teachers who have not historically been responsible for student literacy are now expected to contribute to literacy skill development for students in grades 6-12. This is a meaningful change for science and social studies instructors. As a former middle school science teacher described in an interview, the focus of his science instruction was on student growth in science aptitude. While aware of differences in literacy levels, literacy did not play a significant role in his instruction.

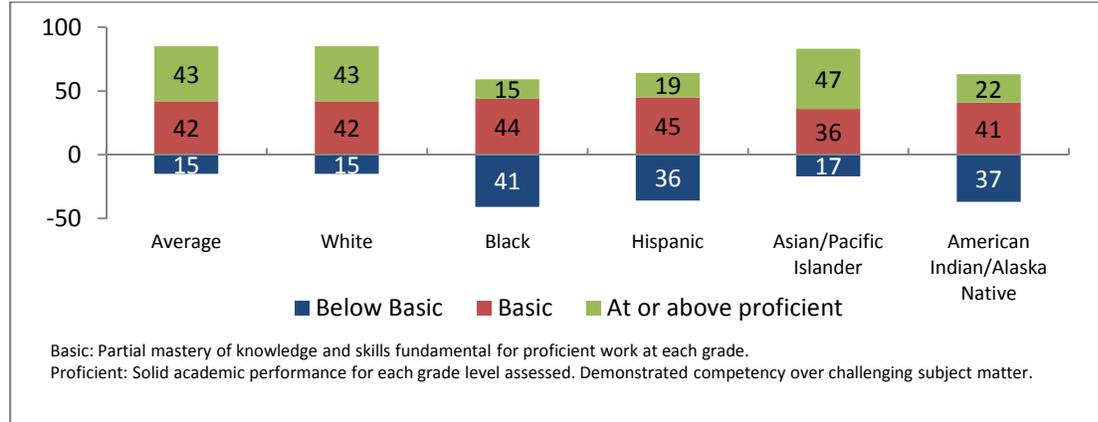
Science and social studies teachers focusing on content instead of literacy makes sense for many reasons. One is simply that they are trained in their particular discipline, not in English or literacy. During the 2011-2012 school year, 78% of natural science teachers had bachelors or masters degrees in science and 79% of social studies teachers were similarly trained in social studies.² Second, there are generally constraints on a teacher's time, demands to meet state standards, and a teacher's own curriculum objectives and plan. Third, it simply was not previously expected. Another science teacher noted that he began his career incorporating text into lessons because he had a visionary principal who foresaw the adoption of the Common Core and pushed him to focus on literacy. His experience with his next principal was quite different; there was no expectation around reading and literacy.

Student Literacy

Teachers have and continue to face significant challenges in addressing student literacy and ensuring that all students can meet established standards. This will likely become a more challenging task, as the Common Core is considered more rigorous than the current standards of many states. One factor that will pose a challenge is that students within a class vary in their literacy proficiency. Students of the same age, as early as elementary school, have varying reading levels. This stratification continues through middle school and high school. Teachers interviewed for this study also confirmed that the wide range is as present in predominantly white, higher income, suburban classrooms as it is in urban, low-income, and largely minority

classrooms. Beyond the range in literacy levels, teachers of largely African-American and Hispanic student populations also have to manage classes in which a large percentage of students are below grade-level. (See **Figure 1.**) Exacerbating the problem is the fact that, on average, public school teachers have to manage this variation within a class of about 27 students and sometimes more than 30 students.³

Figure 1. Percentage Distribution of 8th Grade Students across NAEP Reading Achievement Levels, by race (2011)



Source: Thomas D. Snyder and Sally A. Dillow, (2013), *Digest of Education Statistics 2012* (NCES 2014-015), National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, Washington, DC, table 143.

Technology Investment and Adoption

Policymakers are creating conditions for a shift to digital learning.

Digital content and technology tools, while not yet pervasive, have increasingly become seen as the mechanism to address the range of student abilities and their corresponding learning needs. Such tools offer the promise to better enable differentiated learning experiences for students with varying needs and preferences.

As dissatisfaction with student outcomes has persisted, policymakers have begun advocating for more technology in schools so as to bring forth the promise of differentiated learning. The 2010 National Education Technology Plan calls for the adoption of technology that enables “engaging, relevant, and personalize[d] experiences for all learners that mirror students’ daily lives and the reality of their futures.”⁴ State governments have also begun to demonstrate their support for digital content and tools. Florida legislation has called for schools to spend 50% of the instructional aid they receive from the state on digital materials by 2015-2016. Similarly, North Carolina’s House Bill 44 calls for the to shift its funding for textbooks to funding for digital materials by 2017.⁵

Growth in technology investment is creating the conditions for digital content to be incorporated into instruction.

The demand for differentiation and the digital tools that support it has sparked increases in technology investment (or support for technology investment) to ensure schools have the tools and infrastructure to support digital learning. The Obama Administration is facilitating investment in internet infrastructure to enable broad technology adoption in schools. In June 2013, President Obama launched ConnectED, an effort to provide high-speed broadband internet access to 99% of students in the country. He gave this effort an additional push in 2014, securing product donations and \$100 million dollar investments from companies like Apple, Adobe, Verizon, and Microsoft.⁶ Similarly, Startup:Education and the Gates Foundation, the philanthropies of entrepreneurs Mark Zuckerberg and Bill Gates, have invested \$9 million in EducationSuperHighway, a nonprofit working to improve school broadband connectivity.⁷

Given such broad support and encouragement, schools and districts are beginning to invest in digital learning. In 2012, PC and tablet shipments to US education institutions neared 8.5 million units. About 87% of those sales were to K-12 education institutions. Tablets were the driving force behind this growth in digital device penetration, increasing 103% from 2011⁸. While tablet growth has been high, interest in ChromeBooks is also rising. Thirty-one percent of educators surveyed by Interactive Educational Systems Design indicated their districts had adopted or planned to adopt ChromeBooks, compared to 81% for iPads and 27% for Bring Your Own Device (BYOD) programs.⁹

Two specific examples of districts taking the leap are Los Angeles Unified School District and Houston Independent School District. At the start of the 2013-2014 school year, Los Angeles Unified began to rollout iPads under its Common Core Technology Project, which aims to provide an iPad to each of its 660,000 students.¹⁰ Similarly, the Houston ISD has launched an initiative called Power Up, which aims to distribute 65,000 laptops to high school students and teachers by the 2015-2016 academic year.¹¹ Even those districts that cannot afford sizeable technology infrastructure and device investments are moving toward digital learning with Bring Your Own Device (BYOD) initiatives, allowing students to use their personal mobile devices and laptop computers in class. The Software and Information Industry Association (SIIA) 2013 report on the US education technology market revealed that 80% of K-12 respondents expected to have a BYOD policy in place within five years.¹²

While schools are moving toward digital learning environments, the progression has been gradual as administrators and educators try to find what works best for them and their environment. This is important to note because the decision to use digital content and tools is likely dependent on the accessibility of devices through which these tools can be accessed.

Hardware device penetration opens the door for digital content adoption.

As more students gain access to computing devices, schools have demonstrated increasing demand for digital content. Overall sales of PreK-12 digital content continue to rise. The SIIA 2013 edtech market report estimates that FY 2012 (2011-2012) spending on digital content was over \$3 billion, a 20% increase from FY2011.¹³ The supply of digital content is robust and growing, but there are challenges facing digital content providers. One is that adoption and

implementation of content will not only vary across districts but also between classrooms. What teachers choose to use and how they use it will vary widely. Furthermore, there is wide proliferation of free open education resources (OER), and educators are becoming more comfortable using them. This increasing supply of paid and free content will put price pressure on vendors, large and small, making success in this space particularly challenging.

Altogether, these four factors—the rise of the Common Core, persistent gaps in student literacy skills, rising political pressure for digital learning, and increasing technology investment—suggest there is a favorable market context for introducing a digital product that helps teachers develop student literacy skills and manage varied literacy levels within a single class. However, for teachers to adopt a product into their existing practices, it will need to solve a significant enough problem for them and do so better than their current alternatives. Customer interviews provided some insight into this question. Findings from these interviews are discussed in the next two sections—Target Customer and Product Design. The findings also informed the analysis outlined in the Go-To-Market section. Each of these sections also includes next steps for WGBH to pursue in light of the study’s findings.

Target Customer

WGBH is interested in targeting science, social studies, and ELA teachers. This section details insights about each customer segment and recommendations for next steps to solidify the target customer.

Science Teachers

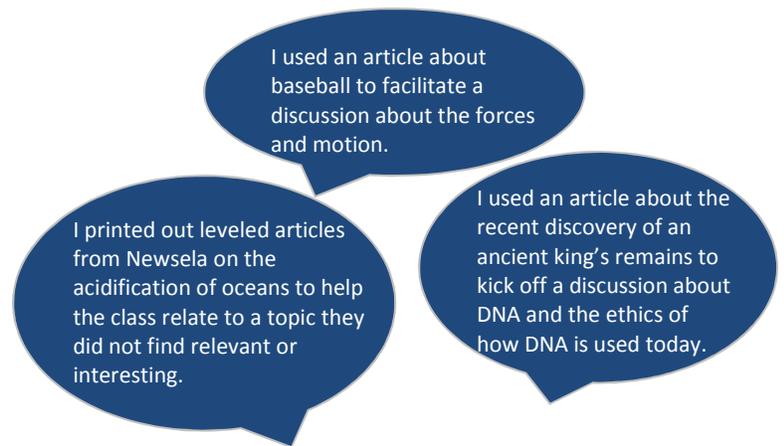
Key Finding: Middle school science teachers have an unmet demand for a product that offers leveled content for their students. They are also dissatisfied with their existing options.

Customer Need

Middle school science teachers have an unmet demand for a resource that provides leveled science content for their students. As one teacher noted, student behavioral problems often result when they can’t access the content. Thus, a major hurdle for science teachers is making science engaging for all their students. To do this, teachers need content that is interesting and relevant. Yet, finding this type of content at the right reading levels is challenging. This is one reason why science teachers might not use extensive text for their lessons. Another reason is philosophical. Some science teachers believe that science is about “doing”—that the best way to learn science is through hands-on experimentation. Despite this, there was some indication that even these teachers might incorporate text more often if there was material available that all students could read and engage with collectively.

Because the Common Core is still in its infancy, it may take years to see if the standards drive teachers to integrate more text into their lessons and how teachers go about doing it. One teacher anticipated changes but was not yet sure how the Common Core would impact her instruction. In the short-term, understanding how science teachers currently use short readings in their lessons can shed some light on the near-term implications for the product. Today, science teachers might use articles for a “Do-Now” that opens up the class session or for an activity that follows a brief lecture about the day’s key concepts. (See **Figure 2** for specific examples.) Differentiation in both cases is difficult because it is challenging to find content accessible to all students. Differentiating the lesson activity might involve even more work because teachers need different instructions and worksheets for each group, based on the various reading levels. This demonstrates the nature of the challenge science teachers face in meeting the literacy needs of various students and exposes the opportunity for a product to serve their needs.

Figure 2. In their Own Words: How Science Teachers Use Differentiated Content



Source: Customer Interviews.

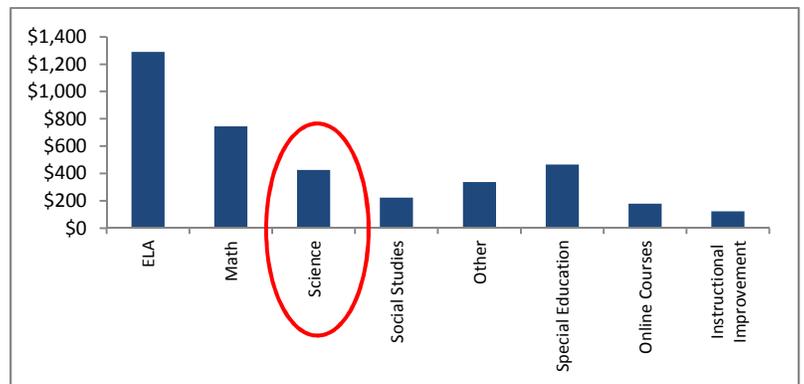
Customer Satisfaction

This study also found that middle school science teachers are dissatisfied with the limited set of resources available to address the needs of students with varied literacy levels. They are frustrated, first, by the dearth of available science content. One science teacher expressed surprise that he was a potential customer as most education products focus on ELA and math teachers because those subjects are tested. This gap between ELA offerings and science offerings is further reinforced by the 2013 SIIA edtech market report, which estimates that the market for digital science content is \$427 million compared to the \$1.3 billion market for ELA content.¹⁴ (See **Figure 3**.)

Of those science products that are available, teachers are dissatisfied with how those products lack the *trifecta*: content that is engaging, content that is appropriate for the student’s age level, and content they can read. Examples cited as unsatisfactory include Brain POP (not age-level appropriate) and

differentiated content on CDs from McGraw Hill and Pearson (not engaging).

Figure 3. Estimated Digital Education Content Sales, 2011-2012 (\$ in millions)



Source: Chart recreated from John Richards and R. Struminger, 2013 U.S. Education Technology Industry Market: PreK-12, (2013), Software and Information Industry Association, p. 18.

Note: Figures reflect extrapolated market size estimates based on smaller sample of actual survey response data.

Customer Alternatives (Potential Competitors)^a

Science teachers often turn to *open educational resources (OER)* to meet their content demands. However, they face notable challenges in using miscellaneous free resources from the internet. To find reliable OER for their lessons, teachers turn to two primary sources—other teachers and well-respected science brands. Blogs and social networks that enable teachers to share their lessons and access others are growing in popularity. These sites enable teachers to find out what other teachers are using to teach the same concepts. Teachers in this study also turned to sources such as National Geographic, NASA, and the National Science Foundation. These sites address teacher concerns about the quality and reliability of information, and they offer student-level versions of their content. Teachers also know they can find content relevant to the topics they have to teach by using known science brands. However, *these alternatives do not yet provide leveled content*, still leaving science teachers to adapt their lessons to accommodate student differences. Because of the additional time this takes on top of finding resources and building lessons from scratch, science teachers may not differentiate often.

In line with the previous findings about the abundance of ELA digital content, the literacy product market is dominated by products built for ELA teachers that focus on literacy development in the ELA instruction context. (See **Figure 4** for product feature comparisons). Two companies offer leveled science content—Achieve 3000 and Newsela—and the latter is a start-up company with less than one year in the market.

Only one of the science teachers interviewed had used either of these two products. Overall unfamiliarity with the products speaks to a notable reality about the education market. Commercially available products primarily sell to schools and districts. Teacher access to these tools is, thus, highly contingent upon principal adoption. Yet, principal adoption does not guarantee teacher adoption. A former charter school principal revealed that his teachers rarely used *Achieve3000* after he purchased it, because the content did not align with standards or fit into their curriculum. (See **Figure 5** for case study and competitive analysis on Achieve 3000). Newer edtech products, like *Newsela*, are starting out by sidestepping administrators and going straight to teachers with free versions or limited free usage. Giving teachers experience with the product encourages adoption and actual usage in the classroom and also provides some leverage as the company pursues district sales. (See **Figure 7** for case study and competitive analysis on Newsela and **Appendix 4** for additional information).

^a Note: Literacy product competitors are privately owned companies, which limits the data available to evaluate their position in the market.

Figure 4. K-12 Literacy and Differentiated Learning Products Feature Matrix

	Core Offering	Grade Level	Content Areas	Content Category	Content Type	Product Format	Device(s)
Achieve 3000	<ul style="list-style-type: none"> • Leveled content • Assessment • Analytics 	<ul style="list-style-type: none"> • K-12 • Adult 	<ul style="list-style-type: none"> • Science • Social Studies 	<ul style="list-style-type: none"> • Informational 	<ul style="list-style-type: none"> • Current events articles 	<ul style="list-style-type: none"> • Web-based • iPad app (secondary) 	<ul style="list-style-type: none"> • Any web-enabled device
Newsela	<ul style="list-style-type: none"> • Leveled content • Assessment • Analytics 	<ul style="list-style-type: none"> • 6-12 	<ul style="list-style-type: none"> • ELA • Science • Social studies 	<ul style="list-style-type: none"> • Informational 	<ul style="list-style-type: none"> • Current events articles 	<ul style="list-style-type: none"> • Web-based 	<ul style="list-style-type: none"> • Website optimized for iPhone and iPad
Accelerated Reader	<ul style="list-style-type: none"> • 3rd party content • Assessment • Analytics 	<ul style="list-style-type: none"> • K-8 	<ul style="list-style-type: none"> • ELA 	<ul style="list-style-type: none"> • Fiction • Nonfiction 	<ul style="list-style-type: none"> • Books 	<ul style="list-style-type: none"> • Software • iOS app 	<ul style="list-style-type: none"> • PC, ChromeBook • iPad, iPhone, iPod touch • Android tablets with 7+” screens
Subtext	<ul style="list-style-type: none"> • 3rd party content • Assessment • Annotation 	<ul style="list-style-type: none"> • 6-12 	<ul style="list-style-type: none"> • ELA • Science • Social studies 	<ul style="list-style-type: none"> • Fiction • Nonfiction • Informational 	<ul style="list-style-type: none"> • Books • Current events articles 	<ul style="list-style-type: none"> • Web-based • iPad app • edmodo app 	<ul style="list-style-type: none"> • Any web-enabled device
Lightsail	<ul style="list-style-type: none"> • 3rd party content • Assessment • Analytics 	<ul style="list-style-type: none"> • K-12 	<ul style="list-style-type: none"> • ELA 	<ul style="list-style-type: none"> • Fiction • Nonfiction 	<ul style="list-style-type: none"> • Books 	<ul style="list-style-type: none"> • iOS 	<ul style="list-style-type: none"> • iPad
myOn Reader (Capstone)	<ul style="list-style-type: none"> • 3rd party content • Assessment • Analytics 	<ul style="list-style-type: none"> • K-12 	<ul style="list-style-type: none"> • ELA 	<ul style="list-style-type: none"> • Fiction • Nonfiction • Informational 	<ul style="list-style-type: none"> • Books 	<ul style="list-style-type: none"> • Web-based • iPad app • Android app • Kindle Fire HD app 	<ul style="list-style-type: none"> • iPad • Android devices • Kindle Fire HD
Curriculet*	<ul style="list-style-type: none"> • 3rd party content • Annotation 	<ul style="list-style-type: none"> • 6-8 • 9-12 	<ul style="list-style-type: none"> • ELA 	<ul style="list-style-type: none"> • Fiction • Nonfiction 	<ul style="list-style-type: none"> • Books 	<ul style="list-style-type: none"> • Web-based 	<ul style="list-style-type: none"> • Any web enabled device
Actively Learn	<ul style="list-style-type: none"> • 3rd party content • Annotation • Assessment 	<ul style="list-style-type: none"> • 4-12 	<ul style="list-style-type: none"> • ELA 	<ul style="list-style-type: none"> • Fiction • Nonfiction 	<ul style="list-style-type: none"> • Books • Self-selected articles 	<ul style="list-style-type: none"> • Web-based • edmodo app • Google Chrome app 	<ul style="list-style-type: none"> • Any web-enabled device

Source: Compiled based on data available on company websites: www.achieve3000.com, <http://www.renaissance.com/products/accelerated-reader>, <http://www.renaissance.com/products/subtext>, www.newsela.com, www.lightsailed.com, www.myon.com, www.curriculet.com, www.activelylearn.com, accessed March 2014.

*This is primarily a platform teachers can use to build lessons into a text. It primarily competes with other ELA focused products. However, the lesson tools can be applied to any subject so teachers might use this to embed questions, videos, etc. into a New York Times science article.

Notes: Storia (Scholastic) is another popular literacy platform in the market. It is not included because it is marketed and sold to parents.

Figure 5. Achieve3000 - www.achieve3000.com

Product Overview	Web-based differentiated core curriculum and remediation tools. Offers literacy solutions that deliver an assignment (content, activity and assessment) to an entire class but tailored to each student’s literacy level (up to twelve reading levels available). Also offer a complete science curriculum, in partnership with National Geographic Learning, delivered at four Lexile reading levels. Free iPad App for current subscribers of their three primary literacy products—KidBiz3000, TeenBiz3000, and Empower3000.	
Business model	Sales directly to schools, districts, and education service providers. Pricing unavailable.	
Funding	Investors include the New Jersey Technology Council, Palisade Capital Management, LLC, and Insight Venture Partners.	
Sales	2012 revenue: \$47.9 million; ¹⁵ 5-year CAGR: 27%*	
Team	<i>Saki Dodelson</i> , Founder, President & CEO has a business and finance background with some experience running an education publication. <i>Susan Gertler</i> , Ph.D., Founder and Chief Academic Officer, has an extensive background in psychology. <i>Peter Saretsky</i> , CFO, has robust finance experience, having spent over 20 years at American Express and served as CFO of a health education publishing company. <i>Jim, O’Neill</i> , Chief Product Officer, has extensive publishing experience with companies such as HMH and Pearson, where he led product development efforts. His background is also in business and finance.	
Strengths:	Weaknesses:	
<ul style="list-style-type: none"> - Only soup-to-nuts offering (assessment, content, analytics) that provides a large library of science content. - The established differentiated learning market leader - Partnerships with well-respected content providers (e.g. National Geographic) - Students can access in school and at home. - Awards students points and uses avatars to keep them engaged and aware of their progress. - Adaptive, automatically adjusting text complexity to student growth 	<ul style="list-style-type: none"> - Senior leadership team lacks former teachers or education professionals. - Product requires web access to use. - Full offering is most effective in 1:1 computing environment - Teacher access dependent upon school investment - Requires school investment in teacher professional development - Content not organized around key concepts or standards that teachers care about 	
Overall Assessment: Threat		
As the market leader, Achieve 3000 has an established presence and brand for differentiated learning content. They are also taking steps toward gaining broader bottom-up teacher adoption having announced a partnership with Teach For America in December 2013. By providing their core literacy solutions to TFA corps members for free during their two-year commitment, Achieve3000 is taking the approach of many start-up companies—build a large user base to drive greater adoption and school purchase later. This poses a notable threat to WGBH’s efforts. However, their value proposition is significantly different than WGBH’s. In the course of everyday lesson planning, Achieve 3000 might overserve the average teacher, requiring her to go outside her typical lesson planning routine.		
Implications for WGBH		
WGBH has the opportunity to provide a less robust, less complex product that more easily integrates into teacher lives.		

Source: Achieve3000, <http://www.achieve3000.com>, accessed March 2014.

*Author calculated based on data published by Inc. in its annual Inc 5000 as cited above.

Note: Findings and assessment based on website and product demo. The actual full-blown product was not used so some product features may not be captured above.

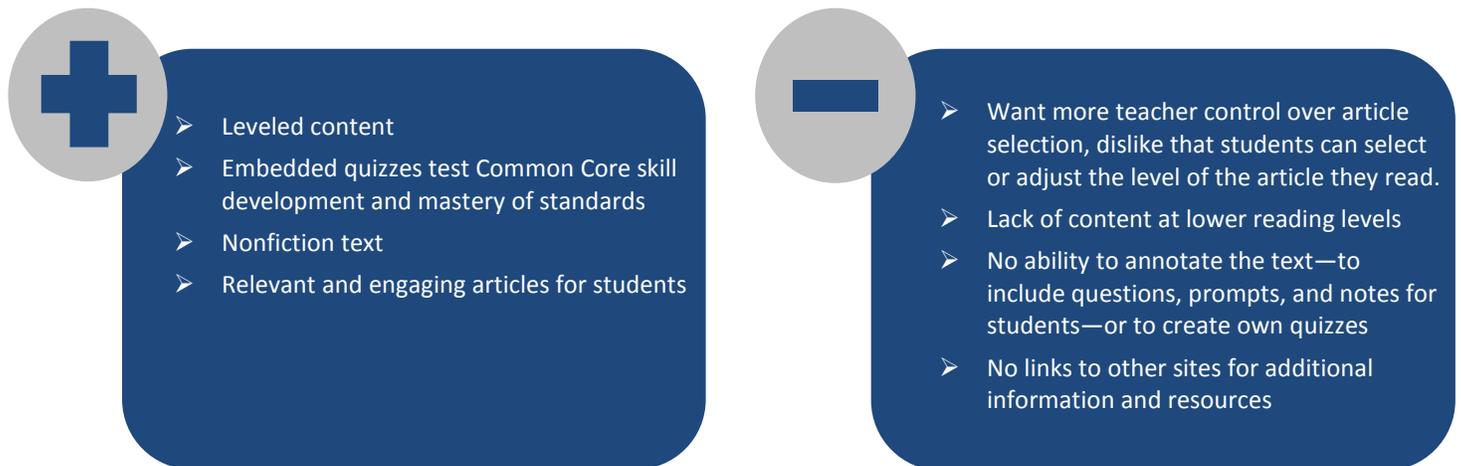
Figure 6. Newsela – www.newsela.com

Product Overview	Web-based service that provides daily news articles at five Lexile reading levels—740, 800, 1060, and 1140. Assessments embedded into some articles and annotation capabilities provided for students and teachers. Content partners include the Associated Press and McClatchy-Tribune newspapers (e.g. Chicago Tribune, Los Angeles Times).	
Business model	Freemium. Initial access to website is free for teachers and students. Only students can use assessment features in free version. Pro Version pricing is as follows: Class-wide - \$18 per student; Grade-wide - \$2,000; School-wide - \$6000; District pricing also available upon request.	
Funding	The company is a venture-backed start-up that raised \$1.2 million in seed funding in 2013. NewSchools Venture Fund and Kapor Capital led the funding round. Other investors included Kaplan Ventures, Silicon Badia, David and Joannie Fischer, Brigitte Lau, Zac Zeitlin, Jennifer Coogan and Isaac Taylor, Walter Winshall, and Margaret McKenna. Newsela was also awarded a Gates Foundation Literacy Courseware Challenge grant and was a graduate of the Kaplan EdTech Accelerator powered by Techstars. ¹⁶	
Sales	Not available	
Team	Founders Matthew Gross, CEO, and Dan Cogan-Drew, Chief Product Officer, have extensive education backgrounds. Matthew has worked on Common Core and Race to the Top initiatives and has managed previous entrepreneurial media ventures. Dan has worked on implementing technology programs in schools, including spearheading digital learning efforts at Achievement First. Other team members have experience in teaching, journalism and business.	
Strengths:	Weaknesses:	
<ul style="list-style-type: none"> - Addresses two problems facing teachers—providing relevant and engaging informational content to students and providing the same reading material to students at different reading levels - Visually appealing website. Sleek design makes product stands out from other education market offerings - A free trial period for teachers facilitates user trial. Trial helps overcome potential teacher resistance to a new tool and generates wide user adoption that Newsela can leverage with districts. - Includes Lexile level and grade level for each article - Printing feature enables teachers to bring hard copies into the classroom. 	<ul style="list-style-type: none"> - Does not link articles to the concepts a teacher has to teach. - Also does not connect the article to other helpful resources a teacher might use to build a lesson around that concept - Per online customer reviews, too expensive for teachers to purchase themselves - Leveling articles daily is likely to be expensive and require substantial investment in human resources, which could prove to be a cost disadvantage that drives high prices. However, the company notes its proprietary, rapid text leveling process. If this is digital, it might be a strength. - Teacher tools (e.g. assigning articles, viewing student data) only available via pro version. 	
Overall Assessment: Significant Threat		
<p>With a simpler and more accessible offering than Achieve 3000, Newsela is targeting the same teachers to whom WGBH wants to sell its leveled essays. While WGBH does have a large library of content, particularly in science, Newsela is quickly building a robust offering for teachers between its Beta website and Pinterest page. In fact, the Pinterest page suggests that Newsela might be moving toward a feature that organizes its content by topic. (See NASA’s New Frontiers collection.) Newsela does not carry the brand of shows like Nova, but a potential threat to WGBH would be if Newsela partners with a leading science publisher like National Geographic to provide leveled versions of their content. However, this may be unlikely since National Geographic partnered with Achieve 3000 on its leveled science curriculum. Another potential challenge for WGBH is the increasing web traffic of Newsela with 119,000 unique visitors per month spending about 15 minutes on the site per visit. This is up from 1,600 visitors when they launched in June and 55,000 in October.¹⁷</p>		
Implications for WGBH		
<p>Leveraging the brand of WGBH shows and offering a lower price could potentially provide points of differentiation. Since important teacher functionality (e.g. assigning leveled content to students) is limited to the Newsela premium version, WGBH may have the opportunity to become the low price provider of leveled science and social studies content. However, there is still the risk of competing with free, as a teacher can print leveled articles using the free version of Newsela.</p>		

Source: Newsela, www.newsela.com, accessed March 2014.

Teacher adoption, however, is not solely based on the price of the resource. EdSurge has published teacher reviews of Newsela that provide some insight into how well the product is meeting teacher needs. Overall, the most popular feature cited, in reviews and interviews, was the leveling.¹⁸ (See **Figure 7** for summary of teacher feedback.) Additionally, the teachers interviewed for this study were shown Newsela. One science teacher, who had used the product, expressed deep satisfaction that the article she used actually did have the exact same content at each level. Then again, a general frustration among the science teachers was that it was hard to find the content they needed. They could not perform advanced searches by specific topics, and the articles were not organized in a way that made it easy to find content by a specific theme.

Figure 7. Teacher Reviews of Newsela



Source: Summary based on EdSurge, “Reviews of Newsela,” <https://www.edsurge.com/p/newsela/reviews>, accessed March 2014.

These reactions support the assertion that there is unmet demand for differentiated content and that existing products are not adequately meeting science teacher needs. Achieve 3000 depends on school purchase and, while a robust solution, may not easily integrate into a teacher’s normal routine. Newsela, while accessible to teachers on a trial basis, is not designed for science instruction. This creates an opportunity for WGBH to provide a competitive product that is both accessible to teachers and better suits their instruction needs.

English Language Arts Teachers

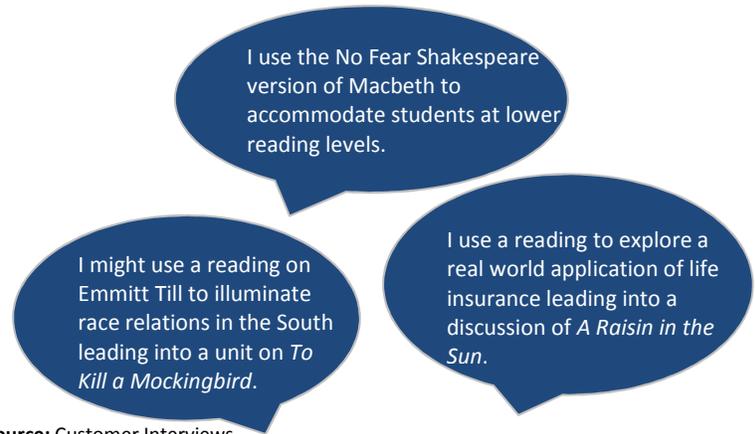
Key Findings:

- While ELA teachers use differentiated content in their lessons, their potential demand for WGBH leveled essays is unclear.
- Many products currently address a wide range of ELA teacher instructional needs. This competitive landscape will make it more challenging for a WGBH product offering to gain significant adoption.

Customer Need

Similar to science teachers, ELA middle school and high school teachers indicated a need for leveled content. However, ELA teacher needs for short-form informational text were different than those of science teachers. The teachers in this study used articles and short essays to help provide context for a book that their whole class was reading as the core part of a given curriculum unit. (See **Figure 8** for specific examples.)

Figure 8. In their Own Words: How ELA Teachers Use Differentiated Content



Source: Customer Interviews.

Because these books are not selected based on widely-adopted standards as was the case for the science teachers, there is variation in which books are used. For example, the ELA teachers in this study noted their desire to choose texts that related to their students' real life experiences and circumstances (e.g. *The House on Mango Street* for a predominantly Hispanic class in an urban neighborhood). There is also variation in the topics teachers choose to illuminate with the short readings they assign to accompany a given book. For instance, one teacher incorporated articles about race relations and life in the south to accompany *To Kill a Mockingbird*. While another teacher used articles about the importance of a father figure for the same book. This variety—in core texts and short readings—could make it challenging to provide complementary articles or essays if the topic or situational context is not universal.

Independent student reading—when teachers require students to read outside the core texts required for class—is another part of the ELA teaching experience that impacts teacher needs for content and instructional aids. This is where differentiation was found to be fairly common, as teachers expected students to read texts most suited to their reading level. Independent reading poses an additional set of differentiation challenges for teachers because they need to ensure that students find books that are reading level appropriate and grade-level appropriate. For instance, a book written at a 3rd grade reading level might not offer a compelling story for an 8th grade student. While independent reading may not directly impact a teacher's need for short-form content, it is an important aspect of ELA instruction. Understanding the broader needs of the ELA customer segment can better inform product decisions.

Lastly, annotation ability is another ELA teacher need. Having students write on text, whether a short article or long novel, is a mechanism teachers use to guide student discussion and understand student learning. Teachers in this study noted the importance of developing this skill and how they viewed it as intertwined with reading text. They also noted a bias for hard copy texts to accommodate annotation needs. This preference could impact ELA teacher willingness to adopt a digital product.

Among ELA teachers, there are also mixed feelings about differentiation as an approach to instruction. Some teachers believe in whole class instruction—that students learn better when

working through a text together or that all students should be challenged to achieve the same levels of performance. Such teachers prefer not to differentiate their lessons or the content in them, at least not often. This sentiment may not be widespread, but it does suggest that there is a segment of ELA teachers that might not value leveled content.

Overall, there is some evidence of demand for short-form informational text essays. However, the potential topics are wide ranging and not consistent along clear dimensions like they are for science teachers. ELA teachers also have a range of other needs related to literacy instruction that might be just as salient or more salient than their need for leveled essays. Given these aspects of ELA teaching, their potential demand for leveled WGBH content was unclear.

Customer Satisfaction

ELA teacher satisfaction with resources available to accommodate varied reading levels was mixed. There is no indication of complete satisfaction, but there is little indication of significant dissatisfaction. One reason might be that teachers have found creative ways to address their needs for differentiation and, thereby, consider available resources sufficient. For example, one ELA teacher purchased novels in different versions. Some students got the CliffsNotes version of the book, others got a guided version of the actual text with notes and vocabulary defined, and others got the original text. A second teacher differentiated an article by giving some students the summary, others the original article, and others a harder version of the article. ELA also use web tools that level text and allow them to input self-created content or text from a web article, assess the level, and adjust it appropriately. Such practices may have lowered their expectations for the resources needed to differentiate.

Another explanation for mixed levels of satisfaction might be that teachers seem content with the online teacher community as a source of good lesson resources. One teacher noted that while she was frustrated a few years ago, if organizations like BetterLesson had been around, she might have felt very differently. This feeling was supported by another teacher who noted, “the internet community of teachers is amazing!” While ELA and science teachers both demonstrated a similar reliance on other teachers for resources, the ELA teachers seemed to have greater enthusiasm about the type and quality of resources available to them through this channel. While a leveled eBook might eliminate the need for workaround solutions and might be a better tool for differentiation than another teacher’s lesson, the desire for such an improvement was not expressed.

Customer Alternatives (Potential Competitors)

In addition to the aforementioned teacher-created solutions, there are other digital products in the market that address the range of ELA teacher needs. Renaissance Learning’s Accelerated Reader (AR) and Subtext products plus new entrants like the Lightsail ereader platform are well suited to helping teachers manage independent reading, annotate core texts and assess student comprehension and literacy skill development. (See **Figure 9** for overview of literacy product landscape and **Figure 4** for comparison of product features.)

Just as with Achieve3000, most teachers interviewed were also unfamiliar with *Accelerated Reader (AR)* or *Subtext*, but there were indications that Renaissance Learning’s portfolio of products is serving ELA teachers well. For example, the founding principal of a charter school indicated her intention to purchase AR for her school. As a former ELA teacher, she liked that it provides data on students’ independent reading such as their reading comprehension and improvement in reading ability.

Figure 9. Literacy and Differentiated Learning Product Landscape

	Content		Assessment		Analytics & Reporting	Annotation
	Leveled Content	3 rd party Content Library	Baseline Assessment (Reading level)	Formative Assessments (ongoing skill development)		
Achieve 3000	Dark Blue	White	Dark Blue	Dark Blue	Dark Blue	White
Newsela	Dark Blue	White	White	Dark Blue	Dark Blue	Dark Blue
AR	White	Dark Blue	Dark Blue	Dark Blue	Dark Blue	White
Subtext	White	Dark Blue	White	Dark Blue	Dark Blue	Dark Blue
Lightsail	White	Dark Blue	White	Dark Blue	Dark Blue	Dark Blue
myOn Reader	White	Dark Blue	Dark Blue	Dark Blue	Dark Blue	White
Curriculet	White	Dark Blue	White	Dark Blue	Dark Blue	Dark Blue
Actively Learn	White	Dark Blue	Dark Blue	White	Dark Blue	Dark Blue

Source: Compiled based on data available on company websites: www.achieve3000.com, <http://www.renaissance.com/products/accelerated-reader>, <http://www.renaissance.com/products/subtext>, www.newsela.com, www.lightsailed.com, www.myon.com, www.curriculet.com, www.activelylearn.com, accessed March 2014.

Since sales figures are unavailable, it is hard to discern how widely adopted Accelerated Reader is. However, the Renaissance Learning website notes the following key statistics:¹⁹

- Houses the reading records of over 10.7 million students across over 35,000 schools
- Average of 1.9 million Accelerated Reader quizzes passed each day
- Over 45 million STAR assessments completed during 2012-13 school year

Furthermore, Renaissance Learning’s recent valuation at \$1B by Google Capital²⁰ suggests that the company’s products are doing well and are poised for substantial growth. Although these indicators do not prove teacher adoption, this product seems better positioned to solve ELA teacher problems than its competitors.^b The addition of Subtext, with its annotation capabilities and nonfiction content library, could further reinforce this leadership position. (See **Figure 10** for case study on Accelerated Reader + Subtext and **Appendix 5** for Subtext product experience.)

^b Note: Literacy product competitors are privately owned companies, which limits the data available to evaluate their position in the market.

Figure 10. Renaissance Learning – Accelerated Reader + Subtext – www.renaissance.com

Product Overview	<p>Renaissance Learning’s recent acquisition of Subtext combines Accelerated Reader’s assessment and book recommendation tools with the nonfiction library and text annotation tools of Subtext.</p> <p>Accelerated Reader: AR allows teachers to monitor students’ independent reading practice. It offers over 160,000 quizzes, including 70,000 for nonfiction texts.</p> <p>Subtext: This ereader platform enables teachers to embed questions, discussion prompts, polls, web links and media in a given text. It provides access to a library of nonfiction articles at various student reading levels and a large collection of eBooks. The premium version includes Common Core assignment templates and curated article collections by topic.</p>	
Business model	<p>Accelerated Reader – Sold to districts. Pricing unavailable.</p> <p>Subtext – Freemium. Free iPad app and web experience. Upcharge for additional teacher tools.</p>	
Funding	<p>Private equity firm, Permira Funds, acquired Renaissance Learning for \$455 million in 2011. In February 2014, Google Capital made a \$40 million investment (at a \$1B valuation) in Renaissance Learning, and a representative joined the company’s board of directors.²¹</p>	
Sales	<p>20% sales growth in 2013²²</p>	
Team	<p><i>Renaissance Learning Team:</i> CEO <i>John Lynch</i> has extensive software and information industry experience, including edtech experience having led bigchalk.com and Pearson Technology Group. <i>D. Andrew Myers</i>, CMO, brings sales and product development experience for digital learning products. Chief Academic Officer, <i>Gene Kerns</i>, has teaching and K-12 administrative experience with a doctorate in education and published work on assessment. Other leadership team members have a range of backgrounds including finance, operations, sales, technology, teaching and education policy.</p>	
Strengths:	AR	Weaknesses:
	<ul style="list-style-type: none"> - Literacy brand well-known for its assessments; wide adoption of AR Star Assessments - Likely strong financial position – can invest heavily in strengthening its product offering, acquiring complementary products and companies, and increasing sales - Provides assessments for tens of thousands of books <p>Subtext</p> <ul style="list-style-type: none"> - Allows for text annotation by students and teachers - Allows teachers to embed lesson prompts into a text - Offers science and social studies content - Organizes articles by the topics a teacher has to teach - Content comes from kids-focused publications and reputable mainstream publications, including Time for Kids, Discover Magazine, National Geographic, Slate, and Mashable. 	<ul style="list-style-type: none"> - Relies on 3rd party content for books and short-form text - Offers content at different levels but does not offer the <i>same</i> content at different levels - Does not connect the article to other helpful resources a teacher might use to build a lesson around that concept - AR requires principal to purchase product for teacher access.
Overall Assessment: Significant Threat		
<p>AR offers a solution well suited to help ELA teachers manage independent reading and monitor literacy skill development. Subtext also suits ELA teacher needs with its robust annotation features. Neither product currently provides teachers with the same content for students at different reading levels within a single class. However, the recent acquisition of Subtext extends the AR literacy product offering to include short-form informational text. With competition from Newsela and potentially WGBH, leveled content would soon be a natural extension of their offering. With the recent Google Capital investment, Renaissance will be able to make new investments and to leverage its existing capabilities (sales force, brand, relationship) to push Subtext and future acquisitions into schools and districts at a much larger scale than a start-up could achieve independently. They pose a significant threat to WGBH because they offer bare bones (Subtext is free) and premium solutions.</p>		
Implications for WGBH		
<p>Though currently best-suited for ELA instruction, they are well-positioned to offer a credible science and social studies offering. WGBH should monitor them and consider partnering.</p>		

Source: Renaissance Learning, www.renaissance.com, accessed March 2014.

Social Studies Teachers

Social studies teachers face similar conditions to science teachers. For example, digital social studies content sales are among the lowest for any content category. (See **Figure 3**.) However, there was only one teacher in this study with experience teaching middle school social studies. Accordingly, more insight is needed to understand the needs of this particular customer segment and their level of satisfaction with existing social studies instruction aids.

Next Steps

This research has highlighted an opportunity to serve middle school science teachers and has suggested that demand among ELA teachers may not be as salient given the abundance of products available to meet their needs. However, the findings are based on a limited sample of teachers. There are also questions regarding unmet demand among social studies teachers. Thus, the following steps should be taken to better define the target customer and test assumptions about demand.

Target Customer Next Steps	
Customer Definition	Use a survey to confirm this report’s findings about the needs and satisfaction of science teachers and to better understand the needs of ELA teachers.
	Conduct focus groups with social studies teachers to explore whether they have unmet demand and, if so, how it compares to that of science teachers.
Demand	Use a test product to gauge level of demand. For example, include free, leveled essays on the five most popular PBS Learning Media digital learning objects (DLOs). Use clicks and downloads to gauge demand for leveled essays.
	<p>Conduct a smoke test^c linked to PBS Learning Media to confirm leveling is an important enough problem that teachers are willing to pay (WTP) for the product. Test leveling with an “Essay at 7 Reading Levels” link; test WTP with “Essay available at 7 Reading Levels: Purchase here for \$0.99” icon on existing DLOs. Also, adjusting the price listed can inform pricing decisions. See examples below:</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid #0056b3; border-radius: 10px; padding: 5px 15px; background-color: #0056b3; color: white; text-align: center;"> Essay at 7 Reading Levels. Click here. </div> <div style="border: 1px solid #0056b3; border-radius: 10px; padding: 5px 15px; background-color: #0056b3; color: white; text-align: center;"> Essay available at 7 Reading Levels: Purchase here for \$0.99 </div> </div>

^c A smoke test is used to gauge demand for a product. It entails creating a mock webpage for the product and directing traffic to it, usually via online advertising. The mock webpage can include a link to more information and/or link to purchase. Clicks provide a measure of customer interest.

Product Design^d

For a new product to quickly garner teacher adoption it must solve an important problem and require minimal behavioral change. This section provides insight into the product design elements that science teachers value and recommends next steps for developing a product. Science teachers are the basis for this section because they provided the strongest evidence of potential demand.

Key Finding: Teachers want content that is engaging for their students while also supporting their lesson objectives. They also want to easily find this content and seamlessly integrate it into their teaching.

Content

The core of this product is the content, and attributes:

1. It is based on the core concepts required in state standards or tied to their curriculum.
2. It explains science concepts in ways that are engaging for students—either through topics of interest (e.g. sports) or current events that allow students to see the relevance of a concept they are learning.

Customer interviews revealed that content is the primary factor that drives teachers to choose the resources they incorporate into their lessons. When science teachers are searching for something to integrate into a given lesson, they start by looking for content related to the topic they are teaching. “Is it the right level?” is one of a number of criteria used to select the resource they will use. Since other factors will play into their choices, the leveling value proposition cannot be divorced from these other considerations. (See **Figure 11.**) The experience of one science teacher who recently used Newsela reinforced this. This teacher had only used Newsela articles once because, when she had previously tried to use the product, she could not find any article related to the topic she was teaching.

Features

Aside from content, the most important functional feature that science teachers desired was a way to easily find the content they need. Two ways the product can address this concern are:

teachers want content that has two key

Figure 11. Teacher Content Selection Checklist

Searching for Content

- ✓ What concept do I need to teach?
- ✓ How do I want to teach it?
- ✓ What would make this interesting and engaging for my students?

Evaluating Content

- ✓ Is this content appropriate, relevant, and interesting?
- ✓ Can my students read it?
- ✓ If not, what modifications should I make to it?

Source: Customer Interviews.

^d Some of the recommended features are attributes of PBS LearningMedia. However, if the product is launched as a distinct tool accessible through a tablet platform (e.g. eBook), it might be more useful to teachers if these features are replicated within the new product

1. Organize essays into topic libraries aligned to key science concepts as outlined in state standards or in a dominant science discipline (e.g. physical science library, biology library).
2. Include a search function that allows users to search for resources using keywords related to a specific lesson topic or science concept.

Other functional features that WGBH should consider and test with potential customers are described below. While they are based on insights from customer interviews, there was a less definitive indication of their importance.

Easy to print. Student access to digital devices might be limited, and teachers may not have a smart board on which they can project the essay when using it for whole class instruction. Devices may also not be necessary or appropriate for how the teacher intends to use the essay. Printing capability gives teachers additional flexibility in how they use the product.

Video clip. The *video + text* concept seemed to resonate with science teachers, but there was no overwhelming evidence that this is a critical feature for the product.

Corresponding lesson activities. Teachers have to piece together multiple resources for a given lesson. Even if they get a leveled essay, they need to figure out what activity they can pair with it and possibly develop a corresponding worksheet and, perhaps level that. Teacher preferences for more robust solutions with additional lesson elements were mixed.

Student access. There was some indication of teacher preference for student accessibility to the content. This functionality would add layers of complication for go-to-market such as volume-based pricing tiers and mechanisms to control what students can access. Achieve 3000 and Newsela include student access.

Reading level comparison. Science teachers are not necessarily familiar with reading level scales. Providing a way to compare the leveling scale to other measures (e.g. grade level) would help teachers figure out which level of content is most appropriate for their students.

Technology

There are three main digital formats a leveled digital content product might take: a web-based application, eBook, or mobile software application. (See **Appendix 6** for pros and cons of each) **Web-based** products, while device agnostic, require internet connectivity, potentially limiting accessibility and ease of use for teachers. **eBooks**, in contrast, do not require internet access and can be made available via both computers and tablets, depending on the selected platform. But, it might be challenging to incorporate certain product features into an eBook. For example, if students can access the book, how will a teacher ensure they only see the essay matched to their reading level? A **mobile application** is the third alternative; however there is a weak fit between a mobile app and the WGBH product concept. The mobile app market is overcrowded, and most “education” category products are consumer-focused edutainment or adult learning

apps. Few apps cater to educators; those that do are free add-ons to existing enterprise products that administrators have already purchased. In this context, it will be difficult for a leveled content product to stand out or charge a fee. (See **Figure 12** for mobile app overview).

Figure 12. Education Mobile Apps

Mobile Apps – Apple App Store

Education apps abound, particularly on platforms like the Apple App Store. There are currently over one million apps in the Apple App Store, and over 115,000 are categorized as education apps.²³

A list of top education apps (paid and free) revealed that children’s edutainment apps dominate. The few non-kids focused apps target adult learners (e.g. Lumosity, Quizlet).²⁴ The highest ranked educator-targeted apps are educreations (a whiteboard that enables teachers to create presentations) and edmodo.[^]

Free appears to be the currency of mobile apps. Over 600,000 of all Apple App Store apps are free, and over 146,000 are \$0.99. Educator apps tend to be free complements to an existing digital product (e.g. Accelerated Reader). Most paid education apps target parents for PreK learning. Many consumer education apps also use freemium models, providing basic apps for free with a premium app for a few dollars.

Source: “App Store Metrics: Application Category Distribution,” 148Apps.biz, <http://148apps.biz/app-store-metrics/?mpage=catcount>, accessed March 2014. “iPad Apps Tracker – Top 200 for Education – Free Apps,” PadGadget.com <http://www.padgadget.com/ipad-apps-tracker/17/1/1/>, accessed March 2014.
[^] Rankings based on number of app downloads in the App Store and updates multiple times daily.

Next Steps

Each technology option presents its own challenges, but the eBook format seems most suited to the purpose of the product. Launching the product as an eBook is also a simple way to test the concept before committing extensive resources.

Product Design Next Steps	
Product Design	Level existing essays associated with five popular PBS Learning Media videos to assess teacher interest in the essay content, as is. This test can reveal whether essays should be rewritten to be more appealing to student interests.
	Develop a beta product in eBook form. Use the beta product to confirm this study’s findings about content and features. If the beta test is successful, consider adding additional content to the eBook or developing a series of topic-based eBooks.
	<p><i>Potential Ideas for Beta Product:</i></p> <ul style="list-style-type: none"> ➤ Leveled essays on ten biology topics for high school science teachers ➤ Leveled essays covering ten physical science topics for middle school science teachers
	Use customer feedback and reviews of the beta product to discover which other features might be important to customers. If customers desire more sophisticated features, consider developing a web-based or mobile app-based product.

Go-To-Market

There are four potential Go-To-Market approaches that WGBH could pursue if it chooses to launch this product for any of the above target customers: Direct-to-Teacher sales, content distribution partnerships, sales to alternative channels, and traditional institutional sales to districts or states. This section provides an overview of each approach and recommends which strategies WGBH should pursue in the short-term. It also includes implementation recommendations for the recommended strategy in the short-term.

Go-To-Market Alternatives

Direct-to-Teacher

The Direct-to-Teacher model provides a great opportunity to reach the teachers who need the product. However, it is likely that most companies do not pursue this path because it is not profitable. Start-up companies that lack the brand recognition or sales capabilities seem to be the only products marketing directly to teachers, giving their products away for free to build a large user base that can be leveraged in securing district contracts. This approach will require substantial upfront investment in customer acquisition. Marketing investment will be critical to creating product awareness and encouraging trial. As one teacher noted, not knowing a product exists is a major impediment for adoption. Standing out in a crowded marketplace of free resources is another significant challenge with this model.

Content Partnerships

Another potential sales avenue is through content distribution partnerships. WGBH Education has a strong track record in establishing partnerships. While the types of potential partners may have changed, there is still an opportunity for WGBH to explore revenue-generating partnerships. In particular, some potential competitors may actually serve as ideal partners. Whereas these partners lack WGBH's quality content, WGBH lacks a widely distributed eReading and literacy development platform. Such partnerships may be challenging to establish in a digital landscape with abundant access to free content, but they are worth exploring. Two potential partners would be Renaissance Learning (Accelerated Reader + Subtext) and BetterLesson.

Renaissance Learning

Currently, Subtext offers science articles at various reading levels from publishers such as Time For Kids. However, articles are only provided at one-level. (See Appendix 5). WGBH could license a leveled eBook or a series of leveled essays for core science subjects like biology to Renaissance Learning for distribution via Subtext. This could provide an additional revenue stream for WGBH and also pre-empt one of Subtext's existing content suppliers from establishing such a deal.

BetterLesson

BetterLesson (BL) does not currently offer science or social studies lessons.²⁵ WGBH could provide leveled content for BL to use in creating a science and social studies Common Core

lesson repository. The lessons could be built specifically around WGBH science and social studies leveled essays and published on the site. WGBH could negotiate a fee per leveled essay download or a set fee for providing the leveled content.

Alternative Channels

Volume licensing through channels like charter schools and teacher preparation programs is also worth consideration. Teachers in these alternative environments might be more open to experimenting with new tools and also might have a greater need for them. Furthermore, selling to these customers will likely be easier than traditional institutional sales, as these principals have more spending flexibility. These schools and teachers also educate the student populations that WGBH Education most wants to reach. This approach, however, might necessitate a more robust product offering.

Institutional Sales

This option is least suited to the product concept and would also require a substantial investment in sales capabilities that would be an unnecessarily costly investment.

Next Steps

Given the simplicity of the product offering, the Direct-to-Teacher model might be a viable strategy, especially to start. However, WGBH should also explore content distribution partnerships with literacy product providers as another potential revenue stream.

Go-To-Market Next Steps	
Go-To-Market	Use the Direct-to-Teacher GTM model for beta test product launch, employing the implementation recommendations outlined below.
	Simultaneously, explore opportunities to license leveled science and social studies content to Renaissance Learning (Accelerated Reader + Subtext) and BetterLesson.

Implementing the Direct-to-Teacher Sales Model

Distribution

Two factors are important in deciding where to publish an eBook for teachers. First is which platform has the tools available to make a high-quality product that teachers will want to use and buy. Because distribution platforms are more or less device-specific, the second factor is which devices have the widest distribution in K-12 schools. (See **Figure 13** for distribution alternatives.)

Apple iBooks tops the list when considering these factors. There are multiple tools to create eBooks for Apple devices, including Apple’s iBook Author^e. iBook Author is free and allows

^e Other tools include blurb (\$9.99 on iTunes), Book creator for iPad (\$4.99 on iTunes), eBook Magic for iPad (\$4.99 on iTunes), Demibooks composer (\$9.99 on iTunes), and Creative Book Builder (\$3.99 on iTunes).

authors to include interactive features, photos, graphics, and rich media. This will enable WGBH to create a high quality eBook experience. In terms of distribution, Apple’s iPads are the most widely distributed tablet in US K-12 schools, comprising 94% of the K-12 tablet market. Overall tablet sales to the US education market were projected to reach 3.5 million units in 2013.²⁶ Furthermore, customers without iPads can still access iBooks. Customers can purchase eBooks from the iBooks Store on Mac, iTunes Store on a Mac or Windows PC, and the iBooks App on iPad, iPhone, and iPod touch.

The iBook platform could be limiting if there is increased adoption of Google devices. Google’s introduction of its educator-specific marketplace, Google Play for Education, plus the flood of new low-priced Android tablets and low-priced ChromeBook laptops, suggest that it might eat away at Apple’s education market dominance. In Q32013, one in five devices shipped to US K-12 schools were ChromeBooks.²⁷ Leading education technology company, Amplify, has also recently introduced its own branded Android tablets. There has only been one major district purchase reported, but their entry speaks to the growing set of alternatives available to schools. Despite the emergence of these other devices, Apple remains the dominant player and the optimal platform for eBook distribution in the near-term.

Figure 13. Overview of eBook Distribution Options

Tool	Overview
Apple iBook	Content is available via iBooks store on Mac, iTunes Store on Mac or PC, iBooks app on iPad. iBook authoring tools allows for publishing with interactive features. Accepts only .ibooks and epub file formats.
iTunes U	This ereader app is exclusive to iPad, iPhone, and iPod touch. Offers catalog of free education content and enables users to organize, annotate, and share content with others.
Google Books+ Google Play	eBooks published via Google Books are sold through Google Play. eBooks can be purchased via Google Play store online and on mobile devices. They are also accessible on iPhone and iPad devices through the Google Play Books app. The search function for Google Books is integrated with Google Search, widening the audience for Google published books. Accepts epub and PDF file formats for publishing.
Google Play for Education	This is Google’s content platform curated for educators. Books are available via a rental model. Rentals are in 60-, 180-, 360-day increments. However, the only types of books currently available are textbooks and literature. This is also not a self-publishing platform as Google reviews the apps and textbooks. Google Play for Education allows teachers to pay for apps and books with a school purchase order number, eliminating the need to involve an administrator when they discover a resource they want to use for the classroom.
Kindle Direct Publishing	Kindle Direct Publishing (KDP) allows authors to easily publish their book for distribution via Kindle devices. Content can be distributed to other devices through the free Kindle app. Devices include PC, Mac, iPad, iPhone, Android tablets and phones, and Windows Phone 7. The KDP Select service requires that publishers distribute exclusively through KDP. KDP accepts word, .htm/.html, ePub, and PDF file formats.
NookPress	This eBook creation and publishing tool allows authors to create books to sell via BN.com, Nook devices and Nook ereading software for Android, iPad, iPhone, Windows 8, Mac, and PC. Nook takes a percentage of the list price. Royalty rates are based on sales price.
edmodo	This education-specific social platform has an API that allows for app distribution to its users. Over 600 apps are currently available. Allows for free and premium apps but does not provide for eBook publishing and distribution.

Sources: Apple Inc., “iBooks,” <http://www.apple.com/ibooks>, and “iTunes U,” <http://www.apple.com/education/ipad/itunes-u/>, accessed March 2014. Google, “Publisher Program Policies for Books on Google Play,” <https://support.google.com/books/partner/answer/166501?hl=en>, and “Google for Education,” <https://www.google.com/edu/tablets/>, accessed March 2014. Amazon.com, Inc., “Kindle Direct Publishing,” <https://kdp.amazon.com/help?topicId=A2MB3WT2D0PTNK>, accessed March 2014. Barnesandnoble.com, LLC., “nookpress,” www.nookpress.com, accessed March 2014. edmodo, “Create Apps for edmodo,” <https://developers.edmodo.com/>, accessed March 2014.

Marketing

Promoting sales of this product should start with a direct link to corresponding lessons in PBSLearningMedia. Current users might be more inclined to try and purchase the product. Another promotional mechanism is the PBSLM newsletter to registered users. However, as one interview revealed, teachers are bombarded with such newsletters and may not pay much attention to them. Additionally, advertising the produce during or after a popular show like *Nova* would allow WGBH to leverage existing assets

As mentioned in the target customer section, teachers rely heavily on other teachers and “expert” websites for lesson resources. This suggests that word of mouth through teachers and the endorsement of well-regarded science brands would be valuable marketing tools. The following are some ideas that leverage this insight.

BetterLesson/Online teacher communities. As previously noted, BetterLesson does not currently offer science lessons. WGBH could sponsor development of science or social studies lessons, which could drive greater awareness of WGBH as a science brand. To more directly drive product trial and purchase, a “Sponsored by WGBH” image on a lesson could also be a link to a WGBH landing page about the leveled eBook.

Teacher Influencers. Another option could involve soliciting teacher influencers (popular bloggers and tweeters) to write reviews of the product on their blog or tweet about the eBook.

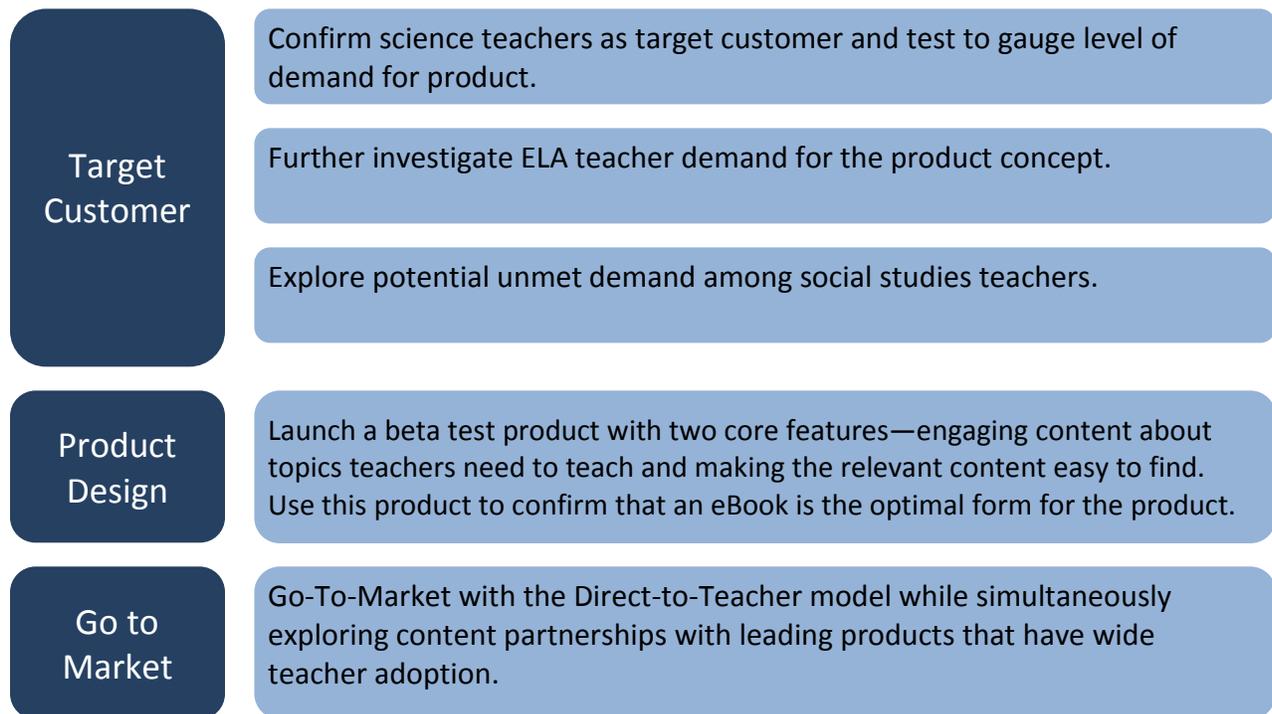
Publishing an article on best practices for using differentiated informational text. WGBH could write an article or how-to guide on differentiation for the AFT and NEA unions or for domain-specific teacher associations like the National Science Teacher Association, American Association of Physics Teachers, the National Council for the Social Studies, and the Association of Teachers of Social Studies. This again would drive further awareness of WGBH as a science or social studies brand, and it might also drive traffic to the website. Linking to a landing page that describes WGBH’s product offering—free and paid products—could encourage trial.

SEO Optimization. A Google search for “leveled science articles” yields results for Scholastic, the American Chemical Society, and Newsela. A search for “leveled content” yields Subtext as the top result. WGBH should optimize PBSLearningMedia, particularly any pages about the eBook, for top search results on Google. Google is often a starting point when looking for lesson content.

Workshops and conferences. This study found that teachers still learn about new products through traditional channels like professional development workshops and conferences. WGBH should continue to remain a presence in these channels.

Recommendations

The findings in this study reflect conversations with a limited set of educators. Also, certain characteristics of these educators may not reflect the broader population of teachers. For example, most taught or are teaching in urban schools with large African American, Hispanic, and free and reduced-price lunch student populations. (See Appendix 2 for interviewee profiles.) These factors may have no bearing on the likelihood that respondents' opinions reflect a broader cross-section of teachers, but future research may confirm or alter this report's findings. As such, the five recommendations below reflect this need for additional research and summarize the next steps previously outlined in the Target Customer, Product Design, and Go-To-Market sections.



Strategic Risks

There are two major strategic challenges to consider with implementing this product. First, WGBH should anticipate a competitive response from content producers like Discovery and National Geographic, either directly with their own product or providing content to an ereader platform. The product concept is easily replicable. If the WGBH product gains popularity, other players that might be better funded could introduce a similar product and potentially bundle leveled articles or essays with an existing offering. If this occurs, video clips for popular WGBH shows, which are currently free, might be the only differentiating factor for the leveled content.

Second, teachers continue to rely on print resources in the midst of this digital transition. In a 2013 Simba Information survey, middle school educators indicated that of the supplemental resources they planned to acquire, 43% would be print and 39% would be online or computer-based.^f On the other hand, when asked about which specific products they intended to acquire, the two most popular responses were digital products—Accelerated Reader and Brain POP.^{g,28} Education content providers will likely live in this print-digital limbo for some years to come. Teacher preferences and behaviors will continue to be important considerations for digital content providers.

Conclusion

This report has outlined findings and recommendations concerning customer demand, product design, and Go-To-Market plans for a digital product with leveled science and social studies essays. Since the findings and recommendations are based on a limited set of data, WGBH should confirm that they reflect broader demand and preferences of their identified customer segments. As noted in the Project Overview, two other important steps that should follow this confirmation of demand include assessing the operational capabilities required to produce and sell the product and assessing the profit-making potential of the product.

^f These findings are not specific to science educators.

^g This survey question asked about supplemental materials for ELA and listed 17 commercially available digital and print products and provided an “other” option. Respondents could select all that applied.

Appendix

Appendix 1. Methodology

This project primarily entailed qualitative research and analysis based on primary and secondary information sources.

Interviews

Interviews were conducted with WGBH staff, potential customers of the product—teachers, an instructional leader, and a former principal. Interviews with WGBH were primarily conducted during the first phase of the project that focused on evaluating strategic opportunities for the organization. They were used to understand their core product offerings and assess their strategic position. Customer interviews were conducted as the primary source of information for the second topic, which is the subject of this report. These interviews were used to evaluate customer demand for a digital product with leveled science and social studies essays.

Interviews were approximately one hour each. They were conducted under the premise of anonymity to ensure rich information sharing and candid responses. Thus, statements from interview subjects throughout this paper are tied to generic characteristics of their profile. (See Appendix 2 for profiles of interview subject.)

Teacher Recruitment: The author sent emails to class distribution lists based on previous classes she had taken at Harvard and to individuals who had listed teacher as a former occupation in their Harvard student profile. Others were recruited via personal connections. The Harvard affiliation of most respondents and the fact that some are not in the classroom at this time could potentially skew the findings. This is a noted weakness of the study.

Case Studies

Public data including company websites, news articles, and press releases were used to develop case studies about competitors and understand potential opportunities for product differentiation.

Market Research & Industry Reports

Market research reports and industry analysis reports about the education and technology industries were used to understand market trends, the competitive landscape, and customer behavior. They also provided insight into the market context for digital content products and digital literacy products. Sources are noted in the Endnotes section of the report.

Public Education Statistics

Data from the National Center for Education Statistics was leveraged to understand digital teacher demographics, student literacy, digital access, and potential market size for the product.

Appendix 2. Interview Subject Profiles

Interview Subject #1

Current Occupation: Founding Principal, Urban Charter School
Former Occupation: Teacher, New York City Department of Education
Years Teaching: 5
Subject(s) Taught: ELA
Grade(s) Taught: 7-8
Student Demographics: 85% Hispanic, 15% African-American; 93% free/reduced-price lunch
School Type: Traditional Public School
District Type: Urban

Interview Subject #2

Current Occupation: Graduate Student
Former Occupation: Teacher, Boston Public Schools
Teacher & Instructional Coach, Seattle Public Schools
Years Teaching: 9
Subject(s) Taught: Science
Grade(s) Taught: 6-8
Student Demographics: Boston: African American and Hispanic; free/reduced-price lunch
Seattle: Asian, African-American, African, Latino
School Type: Traditional Public School
District Type: Urban

Interview Subject #3

Current Occupation: Graduate Student
Former Occupation: Teacher, Chicago Public Schools
Years Teaching: 8
Subject(s) Taught: ELA (regular and honors)
Grade(s) Taught: High School
Student Demographics: 70% Latino, 15% African American, 15% white; free/reduced-price lunch
School Type: Traditional Public School
District Type: Urban

Interview Subject #4

Current Occupation: Graduate Student
Former Occupation: Teacher, Winnetka Public Schools
Years Teaching: 7.5
Subject(s) Taught: ELA
Grade(s) Taught: 7-8
Student Demographics: White, wealthy and upper class
School Type: Traditional Public School
District Type: Suburban

Interview Subject #5

Current Occupation: Graduate Student
Former Occupation: Teacher and Principal, Philadelphia School District and charter network
Years Teaching: 4 teaching, 4 principal
Subject(s) Taught: ELA and social studies
Grade(s) Taught: 5-8
Student Demographics: 70% Latino, 15% African American, 15% white; free/reduced-price lunch
School Type: Traditional public and high-performing charter network school
District Type: Urban

Interview Subject #6

Current Occupation: Graduate Student
Former Occupation: Teacher, Philadelphia
Years Teaching: 4
Subject(s) Taught: Science
Grade(s) Taught: Middle school
Student Demographics: 1st school: 90% African American, 10% other; 60-75% free/reduced-price lunch
2nd school: 60% African American, 30% Hispanic, 10% other
School Type: Independent charters
District Type: Urban

Interview Subject #7

Current Occupation: Teacher, New York City Department of Education
Years Teaching: 3.5
Subject(s) Taught: Science
Grade(s) Taught: 8-9
Student Demographics: 65% African American, 35% Hispanic
School Type: Traditional Public School
District Type: Urban

Interview Subject #8

Current Occupation: Teacher, Winnetka Public Schools
Former Occupation: Teacher, Chicago Public Schools
Years Teaching: 6
Subject(s) Taught: Science
Grade(s) Taught: 7-8, high school (CPS)
Student Demographics: White, wealthy
School Type: Traditional Public School
District Type: Suburban

Appendix 3. Customer Interview Questions

This is a comprehensive list of questions, including follow up probes, used for customer research. Not all questions in this guide were asked in each interview or in this exact order. Guides were adapted based on the teacher's background and the flow of the conversation.

Understanding the Customer

Teaching

- What was it like teaching [subject] to [grade] graders?
- Walk me thru a typical class session.

Lesson Planning

- Walk me through how you develop a lesson.
- How do you determine what resources you use for your lessons?
- How do you go about finding those resources?
- What role do state standards have in developing your lessons?

Using Informational Text

- Under what circumstances do you have your students read as a part of a lesson?
- When do you use an article or essay for a lesson?
- Under what circumstances do you use nonfiction, informational text as part of a lesson?
- What types of nonfiction, informational text resources do you use?
- How often do you use nonfiction, informational text resources?

Understanding the Problem and How Teachers Currently Solve It

Student Literacy Skill Levels

- What range of literacy levels are there in the class(es) you teach?
- How do you know the literacy levels of your students?

Teaching Various Literacy Levels

- What is it like teaching students at various literacy levels?
- How do you go about teaching students at various literacy levels?
- How do you go about developing the literacy skills of your students?

Lesson Planning for Various Literacy Levels

- How do you account for the varied literacy levels when you develop a lesson?

Common Core

- How has Common Core impacted the way you teach?

Satisfaction with Current Solutions

- On a scale of 1-5, how satisfied are you with the resources available for teaching students at different reading levels? 1—very unsatisfied, 5—completely satisfied
 - How could those resources make your job easier?
- On a scale of 1-5, how satisfied are you with the resources available for developing student literacy skills? 1—very unsatisfied, 5—completely satisfied
 - How could those resources make your job easier?

Spending and Purchase Behavior

Teacher Purchase Decision

- What types of instructional resources do you purchase out of pocket?
- How much supplemental budget/funding do you receive from your school?
- How much do you spend (allowance + out of pocket) per school year?

Principal/Instructional Leader

- How did you make purchase decisions for your [school/department]?
 - How do you identify products?
 - What are your decision-making criteria?
 - How do you determine how much you would spend?

Testing Product Concept

Digital eBook

Science/social studies essays (~500 words)

Tied to related video clip

Available in 7 reading levels

Tied to Common Core Standards

- Under what circumstances would you use a product with these features?
- Please rank the features.

Evaluation of Existing Solutions

Products: Achieve 3000, Accelerated Reader, Subtext, Newsela

- Have you ever used [product]?
- Why did you use [product]?
- How did you use [product]?
- How did you find out about [product]?
- Did you find [product] did what you were looking for it to do?
- What did you dislike about using [product]?

Appendix 4. Newsela

Newsela Home Page

HI RONIESHA! [SIGN OUT] BINDER Search

NEWSELA WAR & PEACE SCIENCE KIDS MONEY LAW HEALTH ARTS

Ukraine's Crimean
President Vladimir Putin
of Ukraine part of Russia.

Science debunks creation myth of Pollock's "Mural" masterpiece
03.19.14 midnight
The artist painted the mammoth artwork from sundown to sunup. Or so the story goes. An analysis of the paints shows Pollock worked long and hard on it.

Looking for fossils
03.19.14 midnight
Preparatory work for a subw
lot of fossil finds, including a
lion's mouth, perhaps 2 millic

WAR & PEACE
Navajo code talkers call for housing help
March 18, 2014, 4 a.m.
The Navajo Nation provided housing for its veterans. But now many of those homes are in poor shape. Some say limited funding is to blame, others say the program is run poorly.

KIDS
A new "biblioteca" puts the accent on tech
March 18, 2014, 4 a.m.
How we read is changing, but not everyone can afford to keep up with the latest technology. That's why a new library in San Antonio is swapping out books for tablets, e-readers and iMacs.

SCIENCE
Teenager helps scientists study a rare cancer that she survived
March 18, 2014, 4 a.m.
The disease affects the liver and, if it isn't treated in time, can spread and become deadly.

Source: Newsela, <https://www.newsela.com/>, accessed March 2014.

Teacher-View of Newsela article

Assign To My Readers Hide this article from my readers

Science

Tweet 3+ Like 0

Scientists seek answers to questions about Mormon butterflies

By Los Angeles Times, adapted by Newsela staff
03.17.14 midnight
Grade level: 6



A female *Papilio polytes* (Mormon swallowtail butterfly) in *Formulus* form. Photo: Wikimedia Commons
LOS ANGELES — Feel bad for the common Mormon swallowtail butterfly male. His possible female mates can come in four different color patterns. But only one of those patterns looks familiar. The rest look a lot like other butterflies, and poisonous ones at that.

The problem is unknown to 75 percent of the swallowtail butterfly ladies. Because they look like a poisonous butterfly, they are left alone by predators. But while masquerading as another species works just fine for them, the male and the masculine-colored female are still at risk.

Biologists have studied for a long time how animals try to look like other animals. This is because it teaches them a lot about the process of natural selection. Natural selection is often called "survival of the fittest." It means that animals or plants that can change to fit their environment will survive. Animals or plants that cannot change might get eaten or die out.

However, these plants and animals cannot change on their own. They often develop their survival traits using genes. Genes are inherited from parents. They determine what the animal or plant will look like, what color it will be, how strong it is, how big it is and other factors.

Why Just The Females?

Scientists have studied how animals and plants change to imitate other plants or animals. Still, mysteries remain. Why can only female swallowtail butterflies mimic other butterflies? Why can't the male butterflies?

The scientists think it might be caused by a "super gene."

Scientists "just couldn't imagine that a single gene could do all this," said scientist Marcus R. Kronforst. They believed it has to be a group of genes working together — a super gene. Each

Source: Newsela, "Science," <https://www.newsela.com/articles/butterfly-genes/id/3050/>, accessed March 2014.

Lexile Levels

Printing Feature

A vertical blue sidebar containing a list of Lexile levels: MAX, 1110L, 1030L, 870L, and 700L. Below the levels is a "NO QUIZ" button and a printing icon. Red boxes highlight the Lexile level list and the printing icon. Arrows point from the text labels to these elements.

Printing Feature

A vertical blue sidebar containing a list of Lexile levels: MAX, 1110L, 1030L, 870L, and 700L. Below the levels is a "NO QUIZ" button and a printing icon. A red box highlights the printing icon. An arrow points from the text label to this element.

Appendix 5: Subtext

Subtext Home Page

SUBTEXT SEARCH Roniesha Copeland
Blog | Support | Settings | Log Out

WELCOME

GET CONTENT
MY LIBRARY

GROUPS
Test Group

ADD

Current Events Books & Literature Opinion Skills
Government History Money Culture
Science Tech Health Education

NEW THIS WEEK

Huge Recall by G.M. Sets Off Painful Que...
Missing Malaysia airliner: Questions and...

Source: Subtext, <https://web.subtext.com/>, accessed March 2014.

Subtext: Science Collection >> Biology >> All About the Brain

Source: Subtext, www.subtext.com, accessed March 2014.

Appendix 6. Evaluating Product Technology Options

	Pro	Con
Web-based	<ul style="list-style-type: none"> • Device agnostic • Accessible by any device with internet access 	<ul style="list-style-type: none"> • Requires internet connectivity • Might be difficult to distinguish from PBS LearningMedia • Payment processing must be coordinated by WGBH • Requires web development capability to build
EBook	<ul style="list-style-type: none"> • Does not require user to have internet access once purchased and downloaded • Accessible via PCs and mobile devices • Payment processing managed by platform provider (Apple, Google, Amazon) • Easy and inexpensive to build 	<ul style="list-style-type: none"> • Not well-suited for student access, as students will be able to see all the essays and not just their level-specific essay • Format may not be optimal for providing additional features teachers (links to other resources, worksheets, printing)
Mobile App	<ul style="list-style-type: none"> • Can sometimes be used without internet access • Payment processing managed by platform provider (Apple, Google, edmodo) 	<ul style="list-style-type: none"> • Is not operating system or device agnostic. Limits distribution to a single platform or requires that apps be developed for multiple platforms. • Requires user access to tablet or smartphone • Requires software development capabilities to build

Appendix 7. Evaluating Go-To-Market Options

	Opportunities	Challenges
Direct-to-Teacher	<ul style="list-style-type: none"> • No other products selling directly to teachers. • No other pay-for-use products priced affordably for teachers 	<ul style="list-style-type: none"> • Assumes teachers will pay for leveled content • Requires substantial marketing investment • Competing against free
Content Partnerships	<ul style="list-style-type: none"> • WGBH won't have to build or manage the profitability of a product. • Potential partners have gaps in content offerings • Can guarantee revenue stream for set period of time • WGBH has proven track record of establishing successful content distribution partnerships. 	<ul style="list-style-type: none"> • Requires licensing fee negotiations • WGBH has limited control over the product the teacher ultimately experiences. • Potential distribution partners may be unwilling to pay premium prices for content.
Alternative Channels	<ul style="list-style-type: none"> • More flexibility in purchasing • Potentially more innovative staff willing to experiment with new products • Direct access to large numbers of inexperienced teachers that would need instruction aids as they enter the classroom • Direct access to WGBH's target student demographic 	<ul style="list-style-type: none"> • Requires some sales capabilities and infrastructure, although less than a full institutional sales model • These teachers represent a small percentage of the overall teaching population
Institutional Sales	<ul style="list-style-type: none"> • Access to a large and concentrated group of teachers 	<ul style="list-style-type: none"> • Requires significant investment in sales capabilities • Competing directly against well-established and well-funded for-profit companies • Costly investment for a single-purpose product

Appendix 6. Data to Estimate Market Size, Pricing and Profit Potential for Direct-to-Teacher Go-To-Market Strategy

While this report does not include a financial model to address the profit potential of the product, information regarding key inputs is provided below.

Total Addressable Market (TAM): Per Teacher Pricing

A simplistic estimate of total addressable market if selling to science teachers is: **\$234,000**.

This is based on the following assumptions:^h

- 237,000 middle school and high school science teachers (see Table 1)
- \$0.99 average selling price for an eBook with multiple essaysⁱ
- One-time purchase

Using the same price assumption, the TAM for science and social studies teachers is: **\$420,000**.

- Assumes 420,000 science and social studies teachers (Table 1)

Table 1. Number of U.S. Public School Teachers, by Discipline (2011-2012)

US Public School Teachers (in thousands)			
	Science	Social Studies	ELA
Secondary	209	197	289
Middle [^]	18	--	92
Total	227	197	381

[^]Middle school number estimated based on elementary school data for discipline specific teachers. Elementary school data includes schools with grades up through 8 but starting at 6 or below. This number likely reflects only middle school grades as most elementary teachers are generalists.

Source: Data excerpted from *Digest of Education Statistics 2013*, tables 209.10 and 209.50, National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, Washington, DC, http://nces.ed.gov/programs/digest/2013menu_tables.asp, accessed March 2014.

Other Factors to Consider

Teacher Spending

The National School Supply and Equipment Association 2013 Retail Market Awareness Study found that teachers spent \$485 of their personal income for classroom materials during the 2012-2013 school year. Out of pocket spending for instructional materials averaged \$198, representing over 40% of the average total out-of-pocket spending per teacher. Ten percent of respondents to the NSSEA survey spent at least \$1,000 during the 2012-13 school year.²⁹

Science teachers interviewed for this study spent out of pocket on lab materials and activity resources, but there was an overarching sense that the school or department budget should be used to cover instruction expenses. Only when they could not get school funding would they go out of pocket. Out of pocket spending varied significantly, ranging from very little to over

^h These are baseline assumptions that would require further investigation.

ⁱ Based on the most common price of a paid mobile app aside from free. Additional research should determine if a mobile app is the appropriate price comparison.

\$1,000, depending on the level of school support. However, when asked about purchasing a digital product such as a leveled eBook, the teachers seemed less inclined to spend on a digital resource, again indicating that they would seek school funding before spending their own money.^j While this research revealed that teachers are willing to pay for instructional resources, it did not provide clear insight into whether teachers would pay for a leveled eBook and, if so, how much. As per the report recommendations, the best way to test this would be through a web page smoke test.

Frequency of Teacher Short Article/Essay Usage

Teachers in the study ranged in the frequency with which they used articles in their lessons. Respondents ranged from never to 8-9 times per month. If charging per essay, this will impact total addressable market.

Average Price of eBook

eBook prices ranged greatly—from free to tens of dollars based on length, content, and type. But the prices are not a good proxy for this product because eBooks are generally novels, how-to-books, and textbooks. These are not the same value proposition for a set of essays. A comparable eBook product or mobile app could not be found. A potential pricing comparison would be the print version of an activity book with worksheets that a teacher might purchase from a teacher store or a book with science activity and lab suggestions for teachers.

Total Addressable Market: Per School Pricing

Many of the teachers interviewed mentioned sharing resources with other teachers in their department or grade-level teaching team. This was not exclusive to expensive, large-scale school investments that require product licenses. Given this, it is possible that one teacher per school might purchase the product. It might also be possible to charge a higher price assuming this behavior. Using this premise, another TAM estimate might be: **\$436,000**.

This is based on the following assumptions:

- 43,631 schools with middle school and high school grades (see Table 2)
- One product sold per school
- \$9.99 average selling price for an eBook with multiple essays
- One-time purchase

Table 2. U.S. Public Schools, by grade level (FY 2012)

US Public Schools, 2011-2012	
Secondary	24,357
Middle	12,963
Combined Elementary/Secondary	6,311
Total	43,631

Source: Data retrieved from *Digest of Education Statistics 2013*, table 216.10, National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, Washington, DC, http://nces.ed.gov/programs/digest/d13/tables/dt13_216.10.asp, accessed March 2014.

^j Pricing was not tested during these conversations so it is unclear what prices teachers might have imagined for the product. For instance, a teacher that was skeptical about purchasing a digital ereader noted that she would purchase National Geographic magazines for students.

Endnotes

- ¹ Common Core State Standards Initiative, www.corestandards.org.
- ² Data excerpted from *Digest of Education Statistics 2013*, table 209.50, National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, Washington, DC, http://nces.ed.gov/programs/digest/d13/tables/dt13_209.50.asp, accessed March 2014.
- ³ Data retrieved from *Digest of Education Statistics 2013*, table 209.30, National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, Washington, DC, http://nces.ed.gov/programs/digest/d13/tables/dt13_209.30.asp, accessed March 2014.
- ⁴ U.S. Department of Education, Office of Educational Technology, *Transforming American Education: Learning Powered by Technology*, Washington, DC, 2010, p. x, <http://www.ed.gov/sites/default/files/netp2010.pdf>, accessed October 2013.
- ⁵ Kathy Mickey et al., *Publishing for the PreK-12 Market 2013-2014*, (2013), Simba Information, via MarketResearch.com, accessed December 2013, p.63.
- ⁶ “ConnectED: President Obama’s Plan for Connecting All Schools o the Digital Age” (PDF file), downloaded from The White House website, http://www.whitehouse.gov/sites/default/files/docs/connected_fact_sheet.pdf, accessed November 2013.
- ⁷ Ingrid Lunden, “Mark Zuckerberg, Bill Gates Put \$9M Into Education SuperHighway To Improve School Broadband,” *Techcrunch*, December 4, 2013, <http://techcrunch.com/2013/12/04/mark-zuckerberg-bill-gates-put-9m-into-educationsuperhighway-a-non-profit-to-improve-broadband-in-schools/>, accessed March 2014.
- ⁸ David Daoud and Tom Mainelli, “Tablets Changing the Education Sector in the United States, Major Momentum Underway,” *IDC 241239: 1* (May 2013), IDC, accessed February 2014.
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