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Early Evidence of the Psychometric Characteristics and Usability of the E-book Quality-Rating Tool in the Primary Grades

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Abstract

With the electronic book a rapidly growing alternative to the traditional book in reading programs, there is an increasing need for classroom-based tools that support e-book selection for use in literacy instruction. This study continues the technical development of an e-book quality-rating tool (EQRT) for teachers, testing its technical adequacy and usability with primary grade teachers. This investigation focused on (1) the reliability of the EQRT on a sample of e-books rated by primary grade teachers, (2) the types of e-books primary grade level teachers select for use in the classroom, and (3) the quality ratings of e-books by primary grade level teachers. Results indicated strong reliability of the tool when teachers were provided access and instruction and a preference towards informational text e-book titles.

Keywords: e-books, elementary, primary grades, literacy

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Introduction

E-books for young children are proliferating, and are increasingly viewed as an appropriate source for literacy exposure to books and reading, especially by parents. Among children and youth, e-book reading has almost doubled since 2010 (Scholastic, 2015) and students report reading from a digital format more frequently than a paper-based format (Picton, 2014). Yet relatively little is known about what makes an e-book a 'good' e-book for beginning reading, particularly in relation to new common core state standards (e.g., text complexity, close reading) (Shanahan, Fisher, & Frey, 2012; Boyles, 2013). With the electronic book a rapidly growing alternative to the traditional book in reading programs, there is an increasing need for classroom-based tools that support e-book selection and use in reading education and instruction. This study describes the application of an e-book quality-rating tool (EQRT) in primary grade classrooms toward the goal of providing an effective and usable tool for instructional decision-making.

Review of the Literature

Few studies have directly examined the instructional design and quality of the e-book as a curriculum resource in reading instruction (Roskos & Brueck, 2009), although studies focused on literacy development have peripherally observed design quality problems. Labbo and Kuhn (2000), for example, commented on the need for better designed digital conventions (e.g., pop-ups) to produce more considerate texts that support comprehension. Shamir and Korat (2009) identified several high level design features beneficial for young learners, such as (a) oral reading with text highlights that illuminate the nature of print (e.g., word boundaries); (b) hotspot activation aligned with text; (c) a dictionary option that allows repeated action by the child; and (d) a game mode separate from text mode. Still, deJong and

Bus concluded, based on their analysis of a corpus of 55 Dutch e-books, that most e-books were of mediocre quality—an observation corroborated by McKenna and Zucker (2009) who found research results to be mixed on the benefits of signature features of e-books, such as narration, animation, music and hotspots for developing reading skill.

This study continues a technical line of research on the design of an e-book quality-rating tool (EQRT), testing its application in the primary grade classroom where reading instruction is more formalized. Three research questions framed the study: (1) What is the reliability of the EQRT on a sample of primary grade e-books rated by primary grade teachers? (2) What types of e-books do primary grade level teachers select for use in the classroom? and (3) How do primary grade level teachers judge the quality of e-books using the content in the EQRT?

Methodology

Description of the EQRT

The existing research base provides potential content items for rating e-book qualities, but does not offer design information relevant to formatting a tool for general use. Available examples, such as the CD-ROM evaluation tool developed by Shamir & Korat (2006) and the extensive *Children's Technology Review* checklist 5-star rating system (Buckleitner, 2011), indicate that a well-formatted tool is organized into salient categories; it describes items in clear terms; it provides easy-to-understand directions and rating scales; it automates calculations; it offers an overall quality rating.

Building on this early design work, Roskos, Brueck & Widman (2009) identified and tested several analytic tools on a corpus of 50 mixed genre e-books from popular online sites. The researchers looked at the technical adequacy and usability of these analytic tools along

three dimensions: multimedia design (how words and pictures are presented); interface design (conventions of use, format and controls); and learning design (basic features of instruction or *the learn about loop* of purpose, content, and feedback). Different analytic tools revealed different design features of an e-book, and Roskos, Brueck & Widman (2009) concluded that to judge e-book quality may require a multi-purpose tool that examines both the *e* (electronic features) and the *book* (text features) of an e-book.

Drawing on the design research, Roskos, Brueck & Widman (2009) developed a prototype tool and observed its effectiveness and usability on a sample of 43 preschool level e-books rated by eight early childhood educators in Head Start classrooms. Results showed that the e-book quality-rating tool performed moderately in terms of reliability, and with some further adjustments in directions and item clarity is ready for wider scale testing toward the goal of a reliable, valid measure of early childhood e-book quality.

Considering these features, the e-book quality-rating tool was further refined to consist of three categories: Ease of Use, Multimedia and Interactivity. Research-based items were derived for each category as seen in Table 1.

The Ease of Use category consists of 6 elements that probe the user interface of the e-book. The Multimedia category is also composed of 7 elements, while the Interaction category contains 4 elements. For each category, the teacher is asked to rate the overall quality of the category on a 5-point scale. An opportunity to provide specific comments regarding each category is the final element in each category.

The mechanics of the tool are powered by Google Docs. The Google Forms tool was used to create the browser-based front end of the tool, publically available at http://bit.ly/eQRTv4public. The back-end of the tool, where user data is submitted and stored,

is a private Google Spreadsheet document. To use the quality-rating tool, the teacher accesses the matrix via URL and then uses the web form to provide element ratings and text comments. (See Figure 1.) The online tool is comprises a short set of directions, an area to provide e-book and rater information including title, genre, source (provider), rater name and also indicate reasons for selecting the e-book that will be rated. Each category and all its elements make up one page of the quality-rating tool. The teacher-rater completes each data entry point using a combination of text, paragraph text and radial buttons. A total of 76 data entry points are present in the quality-rating tool. (See Appendix A).

Description of Primary Grade E-book Sample

E-books for young children are like storybooks that are known and loved in some ways. While features of e-books mirror those observed in traditional children's literature, e-books add new, digital features. These digital additions to print are different in a manner that is profoundly changing the storybook as a piece of early literacy learning (Roskos, Burstein & You, 2012). More recent research indicates that e-books may support emergent literacy development through engagement and scaffolding (Moody, 2010). However, there is still a lack of empirical evidence that explains the extent to which e-books support children's emergent literacy development. Additionally, there is some evidence that indicates children's e-books may support comprehension and vocabulary development (Korat, 2010) and comprehension. For the purposes of this study, e-books are categorized into 3 main types that vary depending on the kinds of digital interactive media they employ. (See Table 2).

The EQRT was applied and tested on a sample of teacher-selected e-books from a corpus of approximately 638 e-books drawn from a master inventory of web-based e-book collections available through TumbleBooks (http://www.tumblebooks.com/) and Scholastic

Book Flix (http://teacher.scholastic.com/). E-book genres available in the inventory consisted of 211 non-fiction and 427 fiction titles. E-book types in the sample consisted entirely of media e-books. This type of e-book can range from audio versions of a story to more of a movie-type presentation. Features may include narration, basic animations and print highlighting. These e-books may be accessible through a web-browser or as a mobile app or file, and most often they are limited to "video player" functionality.

Teacher Participants

The Center for Literacy in a College of Education at a Midwest public university used funds from a state educational technology agency to form stronger connections to local school districts through the Digital Text Initiative (DigiTXT) Teacher Planning Grant. A purposive sampling of nine early elementary school teachers was invited to participate in a state Teacher Planning Grant through referrals from each teacher's school administration, based upon proficiencies in utilizing technology for instruction. Nine Caucasian females – ranging from late 20s to late 40s – participated in the study, which took place in three school districts near a Midwestern city. These teachers had a reputation for promoting classroom environments conducive to computer-based learning and technology integration. Bloomberg and Volpe (2008) stated that the "logic of purposeful sampling lies in selecting information-rich cases, with the understanding of the phenomenon under investigation [and] the participants' ability to provide information about themselves and their setting" (p. 69).

Procedures

As part of a program titled Digital Text Initiative (DigiTXT), a group of early elementary teachers received access to and training to use an e-book library. Building upon an e-book instructional model (Roskos, Burstein, You, Brueck & O'Brien, 2011) that is

purposefully underspecified to provide a broad-view of what happens when e-book information and communication technologies are inserted into the early elementary classroom, the DigiTXT model was implemented in nine early elementary classroom sites. All the classrooms were located in the Midwest region of the United States. Classrooms from 3 different local educational agencies (LEAs) were a part of the study. Grade levels represented included four grade 2, three grade 1 and 2 kindergarten classrooms.

Each participating DigiTXT classroom was provisioned to meet the specifications for the e-book nook, an Information and Communications Technology (ICT)-rich, high quality language- and literature-rich environment for implementation of the e-book instructional model as listed in Table 3.

A large body of research shows the powerful influences of environment on young children's language and literacy use, including book reading (Neuman & Celano, 2001; Roskos & Neuman, 2001). Access to technology, media, visuals, print media and books is a strong contributor to students' development of print knowledge (Uchikoshi, 2009; Goldstein et al., 2016) while time to talk about books and to engage in play also have a bearing on the amount of oral language use and word learning (Justice, Kaderavek, Fan, Sofka, & Hunt, 2009; Roskos, Ergul, Bryan, Burstein, Christie & Han, 2008).

Teacher Training

Participating teachers were provided instruction in design strategies and skills that enrich environments with language, literacy and content through face-to-face professional development and online tutorials (Figure 2.) that provided examples and design skill practice. The online training can be found at http://youtu.be/XynmIyGa268. The focus of the teacher instruction was on the development of procedural knowledge based on a set of design

principles (Roskos & Vukelich, 2008) and included program introduction, an overview of e-books for young children, accessing and sharing e-books, identifying quality e-book resources, completing an e-book quality rating using the EQRT, developing classroom spaces for e-book reading and vocabulary instruction. A web-based portal was developed to serve as a repository for all professional development materials.

As part of teacher training, quality indicators of children's e-books were provided and examples were shared. Developing a shared understanding of each category and both high-quality and low-quality examples between teacher raters was considered crucial road towards ensuring reliability and validity in the study. The key characteristics of each category that were shared with the teacher raters can be found in Table 4.

Data collection

Building on earlier work by Roskos, Burstein, You, Brueck, & O'Brien (2011), an e-book instructional model was implemented in the e-book nook area of the nine DigiTXT early elementary classrooms, with multiple small groups (n=4) of children. The nine early elementary teachers self-selected e-books from the TumbleBooks and Scholastic Book Flix corpus of media e-books and shared them with their students over two four-week periods. Following each e-book shared reading session, the teachers completed the E-book Quality-Rating Tool.

Reliability

The three constructs were found to be used reliably by the raters in the pilot phase. Inter-rater reliability was established by calculating two-way random interclass correlation coefficients (ICC) for each of the three constructs as each are measured on a continuous scale (Kottner et al., 2011). All three constructs had ICC's near the 0.70 threshold that is a common

threshold in the social sciences for reliability analyses (Nunnaly & Bernstein, 1994). Even if no threshold is sought, the ICC's represent strong positive correlation coefficients among the raters. See Table 5 for ICC's for each construct.

Data Analysis

Frequency data were used to view EQRT data from a broad perspective. Means on each of the three constructs (Ease of Use, Multimedia, and Interactivity) were compared using the One-Way Analysis of Variance (ANOVA) to determine whether a statistically significant difference could be found based on e-book type (literary or informational text), e-book source (Tumblebooks or Book Flix) and the grade levels taught.

ANOVA analyses found a significant difference in means on the Multimedia construct by e-book type [$F(1,132) = 4.208$, $p = 0.042$], by e-book source [$F(1,132) = 5.444$, $p = 0.021$], and by grade level of the rater [$F(2,131) = 3.307$, $p = 0.040$]. Significant differences were also found on the Interactivity construct among the grade levels of the raters [$F(2,131) = 5.980$, $p = 0.03$]

Results

Ratings for 65 e-books were collected during the first four-week period, while 69 ratings were collected during the second four-week period for a total of 134 ratings. Of those, the nine elementary teachers rated 84 unique titles. Literary e-books made up 45 of the total ratings while 89 informational e-books were rated. E-books from the Tumblebook collection accounted for 59 of the total ratings while 75 Scholastic Book Flix titles were rated. Mean ratings for each of the EQRT categories can be found in Table 6.

Ease of Use Ratings

The EQRT data show virtually no difference in ratings between literary text (M = 3.84, SD = 0.92) as compared to informational texts *(*M = 4.00, SD = 0.88), $t(132) = 0.94$, $p = 0.35$, $r = 0.09$. There were virtually no differences in ratings in this category between the sources of e-books; Tumblebooks (M = 4.07, SD = 0.74) and Scholastic Book Flix (M = 3.85, SD = 1.01), $t(132) = 1.37$, $p = 0.17$, $r = 0.12$. There were virtually no differences in ratings among grade kindergarten teachers (M = 3.74, SD = 1.41), first grade teachers (M = 4.02, SD = 0.91), and second grade teachers (M = 3.98, SD = 0.78), $f(2) = 0.91$, $p = 0.41$.

Multimedia Ratings

Analysis of the multimedia ratings produced the highest mean rating (M = 4.19, SD = 0.75) of all three categories. Literary texts were rated significantly lower (M = 4.00, SD =0.88) by the teachers than informational text (M = 4.28, SD = 0.67), $t(132) = -2.05$, $p = 0.04$, r = 0.17. In this category, Tumblebooks were rated statistically significantly higher (M = 4.36, SD = 0.58) than Book Flix (M = 4.05, SD = 0.85), $t(132) = 2.33$, $p = 0.02$, $r = 0.20$. There were statistically significant differences in ratings among grade kindergarten teachers (M = 4.33, SD = 0.48), first grade teachers (M = 4.33, SD = 0.60), and second grade teachers (M = 4.00, SD = 0.92), $f(2) = 3.31$, $p = 0.04$.

Interaction Ratings

The final category, interaction, was the lowest rated of the three EQRT categories examined (M = 3.91, SD = 0.75). Teacher ratings show virtually no difference in ratings between literary texts (M = 4.04, SD = 0.77) than informational texts (M = 3.84, SD = 0.74), $t(132) = 1.48$, $p = 0.14$, $r = 0.13$. There were virtually no differences in ratings in the interaction category between the sources of e-books; Tumblebooks (M = 3.90, SD = 0.68) and Scholastic Book Flix (M = 3.92, SD = 0.80), $t(132) = -0.17$, $p = 0.87$, $r = 0.01$. There were

statistically significant differences in ratings among grade kindergarten teachers (M = 3.48, SD = 0.76), first grade teachers (M = 4.04, SD = 0.62), and second grade teachers (M = 4.00, SD = 0.67), $f(2) = 5.98$, $p = 0.00$.

Discussion

This study tested the reliability of primary grade level teachers using the E-book Quality Rating Tool for judging qualities of e-books in three categories: ease of use, multimedia and interaction. The study also provided insight into the types of e-books primary grade level teachers select for use in the classroom and the quality of teacher-selected e-books. From a macro perspective, access to quality tools assists teachers in making good decisions about the educational resources they use to deliver reading instruction. High-powered learning environments have quality materials at their core.

The EQRT was found to be reliable within a small group of primary grade level teachers who participating in the Digital Text Initiative. When provided access and instruction (i.e., PD on technology and an e-book instructional model) primary grade level teachers were able to incorporate e-books into their classroom curriculum and provide meaningful rating data through the use of the EQRT. Interestingly, primary grade level teachers selected informational text over literary text at a nearly 2:1 margin, while the corpus of e-books available for teacher selection finds a much larger number of literary titles as compared to informational text. Primary grade level teachers also rated informational e-books higher than literary e-books in both the ease of use and multimedia categories, while indicating they were lower in interaction than their literary counterparts. So, while informational e-books were less available and lower in interaction, primary grade level teachers still gravitated to these types of texts for use in their classrooms.

A second insight is that the selection of Scholastic Book Flix titles over Tumblebooks when EQRT data indicated that primary grade level teachers rated Tumblebooks higher in both ease of use and multimedia categories and nearly equal in interaction quality. While not addressed by the EQRT, this may be due to the fact that the Scholastic website provides an e-book index that pairs classic narrative-driven e-books with related nonfiction e-books.

The final insight lies within the actual e-book titles themselves. Primary grade level teachers seemed to have significant overlap in the titles that they selected. There were 26 unique titles that were selected and rated by two or more primary grade level teachers. In six cases, at least two-thirds of the teachers selected the same e-book title for use in their classroom. While this is helpful in establishing reliability of the EQRT, this study offers no insight into the additional criteria primary grade level teachers consider when selecting an e-book for use with students (e.g., holidays, curricular ties, themes, content area integration).

Limitations

While this study sheds some light on what types of e-books primary grade level teachers are selecting for use in their classroom, no research is without limitations. The findings do not indicate that all primary grade level teachers prefer informational e-books to literary e-books, rather, they expose the need to probe more deeply along many lines to more fully understand the "how" and "why" of teacher e-book selection. The EQRT proved to be usable in this project, however, it must still be considered whether the content of the EQRT, limited to mainly user interface and multimedia criteria is valid for judging the qualities of primary grade level e-books. How to consider the instructional content and curricular ties an e-book offers to a teacher and a reader and how that actively contributes to an overall e-book rating that is useful for a teacher is still missing from the tool. These limitations need to be

addressed in EQRT revisions and ways found to include content factors and teacher decision-making considerations in judging the efficacy of the tool.

As this is a preliminary study of the EQRT, evidence of its content validity was not gathered. A study of content validity must be incorporated into subsequent revisions of the instrument. Both a confirmatory factor analysis and a content expert analysis of the items are recommended for the next significant revision of the EQRT.

Conclusion

Quality materials matter in creating high-powered learning environments. As e-books for young children proliferate, teachers need practical tools for instructional decision-making that support standards and ensure effective reading experiences. Few tools for evaluating e-books in early childhood education exist, and those that do are largely research artifacts that have not been rigorously tested under real world conditions. This effort to create an effective and preferable tool for teacher use are both timely and relevant towards the design of a digital learning landscape in the early elementary classroom.

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Table 1: *E-book Quality Rating Tool Categories*

Category	**Feature**
Ease of Use	Start Page
	User Guidance
	Page Numbers
	Start/Stop Buttons
	Forward/Back Buttons
	E-book Controls
Multimedia	Fonts
	Text Layout
	Narration Mode
	Print Highlighting
	Audio
	Graphics
	Animated Content
Interaction	Text Interactions
	Illustration Interactions
	Game or Quiz Interactions
	Educational Content Interactions

Table 2: *Types of Children's E-books*

Type	**DESCRIPTION**
Static E-books	Often referred to as "eReaders." Static e-books are digital copies of traditional texts. Readers access the text using an eReader like the iPad, Nook or Kindle. eReader software sometimes provides enhancements like a search feature, highlighting & notes option.
Media E-books	Encompassing a rather wide spectrum, Media e-books can range from audio versions of a story to more of a movie-type presentation. Features may include narration, basic animations and print highlighting. These e-books may be accessible through a web-browser or as a mobile app or file, and most often they are limited to "video player" functionality. FWD/BCK, PLAY/PAUSE
Interactive E-books	These e-books require varying levels of interaction between reader and book. Features range widely but can include user-controlled animations, tap-to-hear word pronunciations, built-in dictionaries/definitions, games and puzzles

Table 3: *Specifications for the E-book Nook*

Component	**Specifications**
Location	Well defined; teacher can see the screen as well as all other centers in the class; and other children recognize the boundaries.
Signage	Sign at eye level with name and picture of local children using the center.
Space	Seating for five comfortably (including one teacher); well-lit; neat and non-distracting; computer screen is visible and touchable/accessible by all participants; contemporary-area "screams the theme" of e-book Nook; colors are not distracting.
Acoustics	Low noise level so all can hear the e-book; use of soft materials e.g., carpet, bean bags, pillows is evident.
Access	Dependable high speed Wi-Fi or wired internet; three + grounded power outlets or surge protector power strip. No cables longer than 6 ft.; no exposed wiring or cables.

Table 4: *Key Characteristics of EQRT Categories*

Category	**Key Characteristics**
Ease of Use	The digital book should be easy to navigate and use; it should employ conventions appropriate to books (e.g., a cover page), yet include adaptations best suited to the electronic environment in terms of physical interaction (e.g., touching, orienting to print,

	scrolling, locating and adjusting).
Multimedia	The multimedia characteristics of digital books should enhance the reading experience. Audio, video, and image assets should be well integrated with the content and support the construction of meaning. Visuals should incorporate quality images that inform the message.
Interactivity	The digital medium should be fully utilized to allow readers' choice and participation; it should support the flow of text from one screen page to the next. It should allow for augmentations that reach beyond the immediate display of the screen page.

Table 5: *Intraclass Correlation for Each Construct*

Category	**Intraclass Correlation**	**Raters**	**Titles**
Ease of Use	0.753	6	10
Multimedia	0.752	6	10
Interactivity	0.638	6	10

Table 6: *Mean Ratings for EQRT Categories*

Category	**Mean**	**Range of Scores**
Overall Ease of Use	3.95	1.0 – 5.0
Overall Multimedia	4.19	2.0 – 5.0

Overall Interaction	3.91	1.0 – 5.0

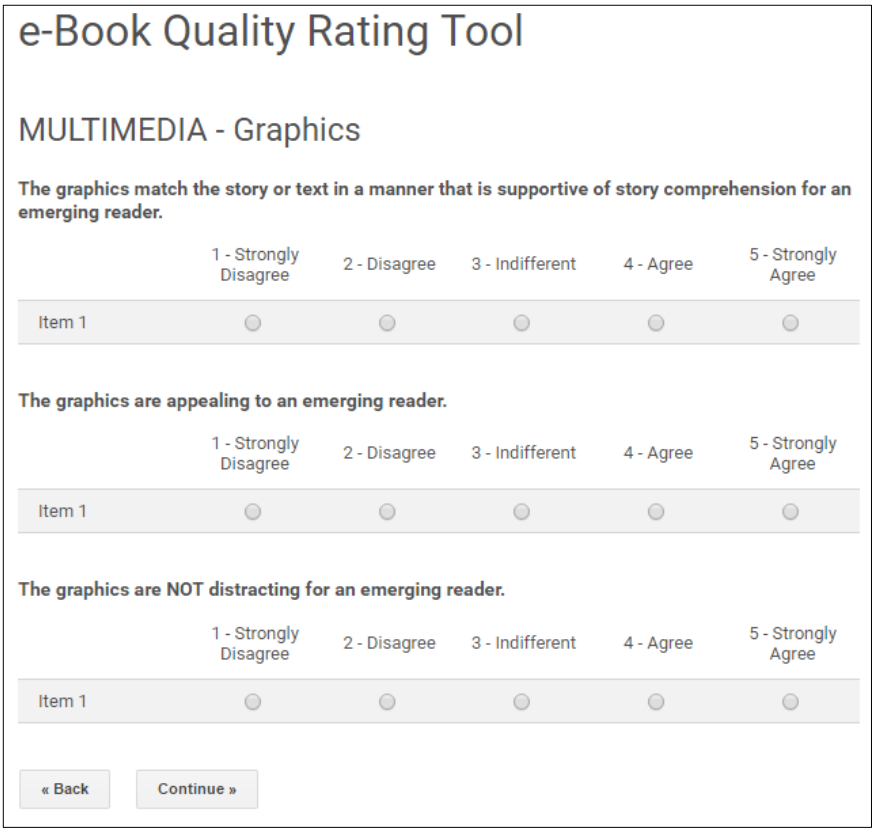

Figure 1. Sample of the E-book Quality-Rating Tool, Version 4

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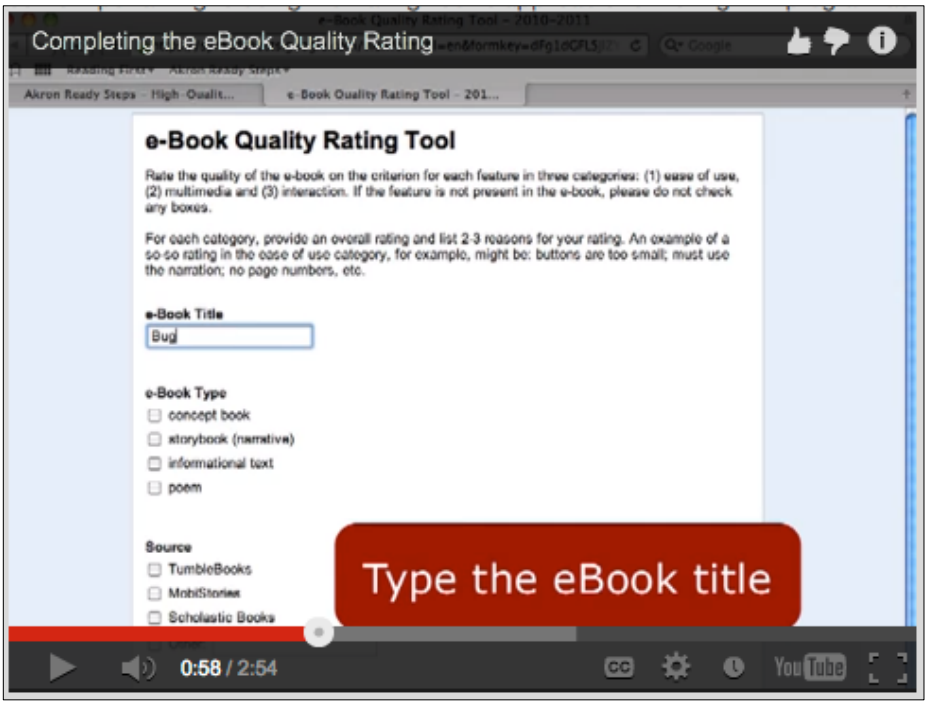

Figure 2. Screenshot of Online Tutorial

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Appendix A

E-book Quality Rating Tool Criteria

Category	Feature	Criterion
Ease of Use	Start Page	The e-book has a clear Start Page. The Start Page may also be considered the “Cover” or “Title Page” of the e-book.
		The Start Page contains the e-book TITLE
		The Start Page contains the e-book AUTHOR.
		The Start Page contains the e-book ILLUSTRATOR.
		It is clear where the child should ‘click’ in order to return to the Start Page, or "cover," from any point in the story.
	User Guidance	The e-book includes directions that explain how to “read” the e-book. The directions may be composed of text, images, or audio prompts. The directions may occur as part of an Introduction or may be viewed/accessed by clicking on a ‘Help’ button.
		The directions are presented in a manner that

		is easy for children to follow.
	Page Numbers	The e-book includes numerals on each page of the story to identify the page number.
		The page numbers are prominently displayed on each page, making them easy to locate.
	Start/Stop Buttons	The e-book has buttons that allow the child to "play" and "stop" the story.
		The buttons are identified with text labels. Text labels could include, but not be limited to, PLAY, STOP or PAUSE.
		Using the Start/Stop buttons would be easy for a child.
	Forward/Back Buttons	The e-book has buttons that allow the child to manually "turn the pages" of the e-book.
		The e-book Forward/Back buttons are identified with text labels. Text labels could include, but not be limited to, FORWARD, BACK, PREVIOUS or NEXT.
		It is clear where the child should 'click' in order to turn the e-book pages FORWARD or BACK.

	E-book Controls	The operation, or clicking of the buttons, of the e-book is within a preschool child's motor skill range
		The way the buttons are laid out on the screen supports a preschool child's independent use of the e-book.
Multimedia	Fonts	The e-book varies font sizes to identify headings and text.
		The e-book uses block letter fonts that support letter-recognition for an emerging reader.
		Use of font styles (italic, bold, underline) is consistent throughout the e-book.
		Use of font styles (italic, bold, underline) improves the readability of the e-book.
	Text Layout	Amount of text per screen is appropriate for an emerging reader
	Narration Mode	The e-book includes audio narration, i.e., it is read aloud to the child.
		The child can toggle the e-book narration ON/OFF to allow independent reading.

		The e-book Narration buttons are identified with text labels, such as ON, OFF or MUTE.
		It is clear where the child should 'click' in order to turn the e-book narration ON or OFF from any point in the story.
		Using the narration control buttons would be easy for an emerging reader.
	Print Highlighting	The e-book includes print highlighting, or tracking, of the text as it is read aloud.
		The print highlights are synced with the narration at paragraph, phrase or word level.
		The print highlights support left-to-right, and top-to-bottom text tracking for an emerging reader.
	Audio	The e-book includes auxiliary audio, like music or sound effects that are not part of the narration of the story or text.
		The auxiliary audio is NOT distracting for an emerging reader.
		The auxiliary audio matches the story or text in a manner that is supportive of story

		comprehension for an emerging reader.
	Graphics	The e-book includes graphics, which could be in the form of illustrations, photos, or pictures.
		The graphics match the story or text in a manner that is supportive of story comprehension for an emerging reader.
		The graphics are appealing to an emerging reader.
		The graphics are NOT distracting for an emerging reader.
	Animated Content	The e-book contains animated content, such as animated pictures or videos, which are not part of the narration of the story or text.
		The animated content can be toggled ON and OFF.
		The animated content matches the story or text in a manner that is supportive of story comprehension for an emerging reader.
		The animated content is NOT distracting for an emerging reader.

Interaction	Text Interactions	The e-book allows a child to access “hot spots,” or click, on text items at the sentence, word, or letter level.
		After clicking on the text, the action that follows matches the story or text in a manner that is supportive of story comprehension for an emerging reader. Examples of this type of interaction may include, but are not limited to, the pronunciation of the word or letter or a dictionary option.
		The text interactions are appealing to an emerging reader.
		The text interactions are NOT distracting for an emerging reader.
	Illustration Interactions	The e-book provides the child with an opportunity to access "hot spots" or click on story graphics, illustrations or pictures.
		The interactions with story graphics, illustrations, or pictures provide auditory or visual options to encourage child exploration.
		The interactions with story graphics, illustrations or pictures are supportive of

		story comprehension for an emerging reader.
		The interactions with story graphics, illustrations or pictures are supportive of building vocabulary for an emerging reader
		The interactions with story graphics, illustrations or pictures are supportive of building content area knowledge for an emerging reader.
		The illustration interactions are appealing to an emerging reader.
		The illustration interactions are NOT distracting for an emerging reader.
	Game or Quiz Interactions	The e-book provides the child with an opportunity to access "hot spots" or click on buttons that activate games or quizzes. Clicking the link to a game or quiz may open the game inside the e-book or link you to an external web address.
		The game or quiz interactions are connected to the e-book theme or topic.
		The game or quiz interactions are meaningful

		to building vocabulary.
		The game or quiz interactions are meaningful to building content area knowledge.
		The game or quiz interactions are appealing to an emerging reader.
		The game or quiz interactions are NOT distracting for an emerging reader.
	Educational Content Interactions	The e-book provides the child with an opportunity to access "hot spots" or click on buttons that with an opportunity to interact with disciplinary content in one or more areas, including, but not limited to, vocabulary.
		The interactions with educational content provide auditory or visual options to encourage child exploration.
		The interactions with educational content are meaningful to building vocabulary.
		The interactions with educational content are meaningful to building content area knowledge.

		The interactions with educational content are appealing to an emerging reader.
		The interactions with educational content are NOT distracting for an emerging reader.