CIES 2017

Atlanta, Georgia

Paper Session: Literacy and Learning Americas Focus

Location *: Sheraton Atlanta Georgia 3 (South Tower), 1*

Date *: Monday, March 6 5:00 pm*

Duration *: 1 hour, 30 minutes*

The development of decodable texts for Dominican children living in marginalized communities: Preliminary findings

Author: Laura V. Sánchez-Vincitore, Ph.D.
Universidad Iberoamericana (UNIBE), Santo Domingo (Dominican Republic)

Introduction

Decodable books are simple short texts used in early literacy instruction to provide learners the experience of reading connected text, while controlling for text difficulty. Mesmer (2000) describes this control based on two main characteristics: (1) the percentage of words that have consistent spellings (for opaque orthographies), (2) the presentation of words that contain letter-sound combinations that have been explicitly taught. Decodable books collections are usually designed as a sequence of progressive stages that correspond to the sequence of phonics instruction. This makes decodable books a scaffold on the contextual use of the alphabetic principle while learning to read (Cheatham & Allor, 2012).

By reducing text difficulty, there is a reduction in working memory load. Working memory is the ability to manipulate and provide access to information required for other cognitive processes or behavior (Wilhelm, Hildebrandt, & Oberauer, 2013). Working memory capacity is crucial for decoding and reading comprehension. A reduction in working memory load while learning to read allows two important processes to take place: (1) On the perceptual level, it promotes constant practice of independent grapheme-phoneme conversion (Mesmer,

2010). According to Share, (1999), every successful trial of phonological recoding independently reached by the learner, promotes self-teaching mechanisms that boost early literacy acquisition. This contributes to a faster lexical access through phonological recoding. Therefore, the constant repetition of successful recoding trials supports the necessary changes in the brain's visual and language regions that are required for reading. This changes happen specifically in the Visual Word Form Area, an association area in the brain originally specialized for face recognition that gradually becomes fine-tuned to words and letters (Dehaene et al., 2010). Decodable books are a resource that could contribute to reading automaticity attainment. (2) Regarding higher order processes, by allowing children to focus on a limited set of already-taught graphemes, the attentional resources usually allocated towards decoding infrequent graphemes, could become available for comprehension. Therefore, learners develop and practice reading comprehension strategies from the beginning of literacy instruction.

Project Read – Decodable text production

Project READ is a USAID-funded educational project that aims to improve reading outcomes in 200,000 children from 600 public schools across the Dominican Republic. Part of this project's intervention strategy is to create high quality, low cost, easily applicable, easily replicable evidence-based reading materials for children to practice literacy skills so they could reach reading automaticity. Given the low reading outcomes in terms of word recognition and knowledge of alphabetic principle reported on this project's baseline study (Mencía-Ripley, Sánchez-Vincitore, Garrido, & Aguasvivas-Manzano, 2016), and the lack of appropriate reading materials reported by schools, some of these materials must be focused on early reading practice. Thus, Project Read's multidisciplinary team developed a methodology for creating decodable books to be used by learners in schools.

The current project follows international guidelines for creating decodable and leveled texts for countries of limited reading resources (Davidson, 2013). In order to create the Decodable Books Collection, 6 steps were undertaken: (1) Development of phonics instruction progression; (2) Creation of decodable stages; (3) Book feature optimization; (4) Writing; (5) Illustration; (6) Publishing and printing.

1. Development of phonics instruction progression: Phonics instruction progression consists of establishing the order in which letter-sound correspondence is taught during class. We determined this progression first by considering letter frequency. We proposed to teach more frequent letters before less frequent letters so that children have more possibilities of reading everyday texts faster. Second, we considered letter combination transparency so the ones with clearer letter-sound correspondences will be taught before more complex ones. We determined a progression of 36 lessons including digraphs and letters that have more than one sound.

Frequency

Progression	a	m	e	n	o	s	i	l	u	y	f	p	t	b	c(k)	q	v	ll	y(ll)	h
Sounds	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1	1	1	2	2

Frequency

Progression	ch	bl	fl	pl	cl	g	gl	r	j	g(j)	c(s)	z	br	cr	dr	fr
Sounds	1	1	1	1	1	2	1	2	1	2	2	1	1	1	1	1

2. Creation of decodable stages: We divided the 36 lessons into 6 decodable stages. The text on each book would contain the letters that each stage features, in addition to the letters from previews stages.

To determine if the selected stages follow a true progression, we used Tangerine (a data acquisition software for early literacy assessment developed by RTI) to collect student data on correct words per minute (CWPM). Two groups of children (N=178, 1st graders vs. 2nd graders) were given a CWPT test on each stage (1 vs. 2 vs. 3 vs. 4 vs. 5 vs. 6). Results show that students read more CWPM on the first stages, and fewer CWPM on the later stages. This supports the idea that first decodable stages are easier for students to decode than later stages. There was one exception for this progression between the second and third stages, in which students read more CWPM on the third stage than the second stage. Later inspection of the book drafts led to the conclusion that words that contained CCV syllables (consonant-consonant-vowel combinations) were causing students to take longer to read words on this stage. Thus, we moved CCVs syllables to the third stage. Figure 1 presents graphical representation of CWPM on each stage by both groups. Table 1 present descriptive statistics on CWPM on each stage.

Figure 1

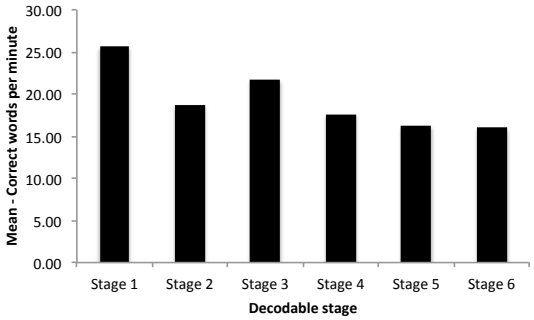

Table 1

Descriptive Statistics

Tests	N	Min	Max	Mean	S.D.
Stage 1	178	0	101	25.58	29.73
Stage 2	178	0	121	18.72	25.67
Stage 3	178	0	122	21.69	27.86
Stage 4	178	0	121	17.61	24.52
Stage 5	178	0	118	16.24	22.82
Stage 6	178	0	119	15.97	23.33

Note: N = sample size; Min = minimum; Max = maximum; S.D. = standard

The final selection of stages after considering the data analysis is presented on table 2.

Table 2

	Graphemes	***Syllable type***
Stage 1	a m e n o s i l u	CV, VC
Stage 2	y(i) f p t b d	CV, VC
Stage 3	c(k) q v ll y h ch bl fl pl cl	CV, VC, CCV
Stage 4	g(g) gu gü gl r rr	CV, VC, CCV
Stage 5	j g(j) c(s) z br cr dr fr	CV, VC, CCV
Stage 6	gr pr tr ñ cc x k w	CV, VC, CCV

3. Optimization of book features: We revised Fountas & Pinnell (2006) recommendations for book length and sentence structure. The decodable books collection for this project corresponds to levels A, B, and C from Fountas and Pinnel's recommendations. Level A books are 8 pages long, and contain one short sentence per page. Level B books contain one short or long sentence per page. Level C books have more than one sentence per page, but occupy no more than 5 lines per page. Level A corresponds to decodable stages 1 and 2; level B corresponds to decodable

stages 3 and 4; and level C, stages 5 and 6. We considered letter type and size to boost perceptual learning (Abadzi, Marinelli, Martelli, Praphamontripong, & Zoccolotti, 2013). We used Andika New Basic, a font created by the Summer Institute of Linguistics for early literacy acquisition, and large font size that was gradually reduced across the stages.

4. Writing: Although decodable books foster reading accuracy, the constraints it imposes to writers (including the need to write short sentences, to have simple stories, to constantly repeat language, and to only use a handful of letters) could make the actual reading material feel unnatural in terms of sentence structure and meaning (Adams, 2009; Goodman, Goodman, & Martens, 2002). We invited a professional children's book writer to create the texts to make the books as like children's literature as possible, and allow creative and artistic contents to overcome typical concerns regarding the both grammatical and semantical structure of these books. The author wrote a full narrative of the story that was placed on the back of the book to compensate for the limitations that decodable books impose in terms of word choices. This way, teachers could read the story aloud, therefore also targeting oral comprehension skills.

5. Illustrations: The use of images in children's books provide a contextual framework that boosts passage comprehension in children (Russell & Joel, 2002). We expected diverse performance among the students who will read these books, so we used mostly representational images that mirror the text, enhancing passage comprehension both from the text and pictures Fountas & Pinnell (2016). In addition, clear illustrations compensated for a possible lack of story coherence, which is common on the first stages of decodable books. Professors and students from the School of Arts were invited to illustrate the books. Figure 2 presents a sample of cover illustrations.

Figure 2

6. Publishing and printing: We created decodable stages templates using BLOOM, a computer word processor to make and share decodable and leveled books. We transcribed the books into the templates, including illustrations that were then downloaded and sent to press.

Conclusions

The purpose of this paper was to present the steps Project Read undertook to develop a collection of decodable books, to be used by learners during program implementation. Our purpose was to make a product of high quality, low-cost, easily applicable, and easily replicable for book practice. For the ***quality*** criterion, we revised existing literature in both developed and developing countries, as well as involving a multidisciplinary team that includes children's book writer, educators, researchers, and artists. Also, we have tested our assumptions with user data (such as the decodable progression), and plan to conduct more studies on decodable books. For the ***low-cost*** criterion, we have reduced book production costs by implementing crowdsourcing strategies. This means that many volunteers worked on every stage of book production. In addition, we are using BLOOM as a word processor and layout management system that facilitates collaboration from multiple people. Also, the decision to include black/white illustration for the content of the book and leave color pages only for the covers, reduced printing costs significantly. For the ***easily applicable*** criterion, these books are intended to be used in classroom libraries. They have a full narrative and a full description of the decodable stages. The fact that the decodable stages are clearly identified makes it easy for teachers, parents, and tutors to understand that children follow a progression while learning to read. Children that do not do well on one stage might benefit from the previous stage, and since expectations for each stage are clear, this automatically gives teachers an easy way to tell where the child needs reinforcement. Regarding the ***replicability*** criterion, we understand that a set of 18 books is not sufficient for reading practice. By asking the children's book author to reflect on his writing strategies and making it into a workshop we will invite many interested volunteers to start producing their own books and feed the virtual library to have more available reading options both to read on a mobile device and to be sent to press.

It is important to note that decodable books are not the only practice material that should be presented to children while they are acquiring basic literacy skills. This is one research-based resource that aims for student reading success, to make them gain confidence, and practice reading to reach automaticity. However, children need to be exposed to a variety of text so that the abilities acquired during decodable text reading could be translated into other written resources.

Acknowledgements

This document is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of UNIBE and do not necessarily reflect the view of USAID or the United States Government.

Special thanks to Yuan-Fuei Liao, Isabel Fiallo, Arlyn García, Angie Díaz, Tulio Matos, Kutty Reyes, Olga Valdez, Analía Henríquez, and Carolina Marte, for their enthusiasm and willingness to be part of this journey.

References

Abadzi, H., Marinelli, C. V., Martelli, M., Praphamontripong, P., & Zoccolotti, P. (2013). Visual and linguistic factors in literacy acquisition: Instructional implications for beginning readers in low-income countries.

Adams, M. J. (2009). Decodable text: Why, when, and how? In E. H. Hiebert & M. Sailors (Eds.), *Finding the right texts: What works for beginning and struggling readers* (pp. 23–46). New York: The Guilford Press.

Cheatham, J. P., & Allor, J. H. (2012). The influence of decodability in early reading text on reading achievement: A review of the evidence. *Reading and Writing*, *25*(9), 2223–2246. https://doi.org/10.1007/s11145-011-9355-2

Davidson, M. (2013). *Books that children can read: Decodable books and book leveling*.

Dehaene, S., Pegado, F., Braga, L. W., Ventura, P., Nunes Filho, G., Jobert, A., … Cohen, L.

(2010). How learning to read changes the cortical networks for vision and language. *Science (New York, N.Y.)*, *330*(December), 1359–1364. https://doi.org/10.1126/science.1194140

Fountas, I. C., & Pinnell, G. S. (2006). *Leveled books K-8: Matching texts to readers for effective teaching*. Portsmouth, NH: Heinemann.

Goodman, Y., Goodman, K., & Martens, P. (2002). Text matters: Readers who learn with decodable texts. In D. L. Schalbert, C. M. Fairbanks, J. Worthy, B. Maloch, & J. V. Hoffman (Eds.), *51st yearbook of the national reading conference* (pp. 186–203). Oak Creek, WI: National Reading Conference.

Mencía-Ripley, A., Sánchez-Vincitore, L. V., Garrido, L. E., & Aguasvivas-Manzano, J. A. (2016). *Baseline report of USAID-Leer*. Santo Domingo.

Mesmer, H. (2000). Decodable text: A review of what we know. *Reading Research and Instruction*, *40*(2), 121–141. https://doi.org/10.1080/19388070109558338

Mesmer, H. (2010). Textual scaffolds for developing fluency in beginning readers: Accuracy and reading rate in qualitatively leveled and decodable text. *Literacy Research and Instruction*, *49*(1), 20–39.

Russell, C. N., & Joel, L. R. (2002). Pictorial illustrations still improve students' learning from text. *Educational Psychology Review*, *14*(5), pp 5-26.

Share, D. L. (1999). Phonological recoding and orthographic learning: A direct test of the self-teaching hypothesis. *Journal of Experimental Child Psychology*, *72*(2), 95–129. https://doi.org/10.1006/jecp.1998.2481

Wilhelm, O., Hildebrandt, A. H., & Oberauer, K. (2013). What is working memory capacity, and how can we measure it? *Frontiers in Psychology*, *4*, 433. https://doi.org/10.3389/fpsyg.2013.00433