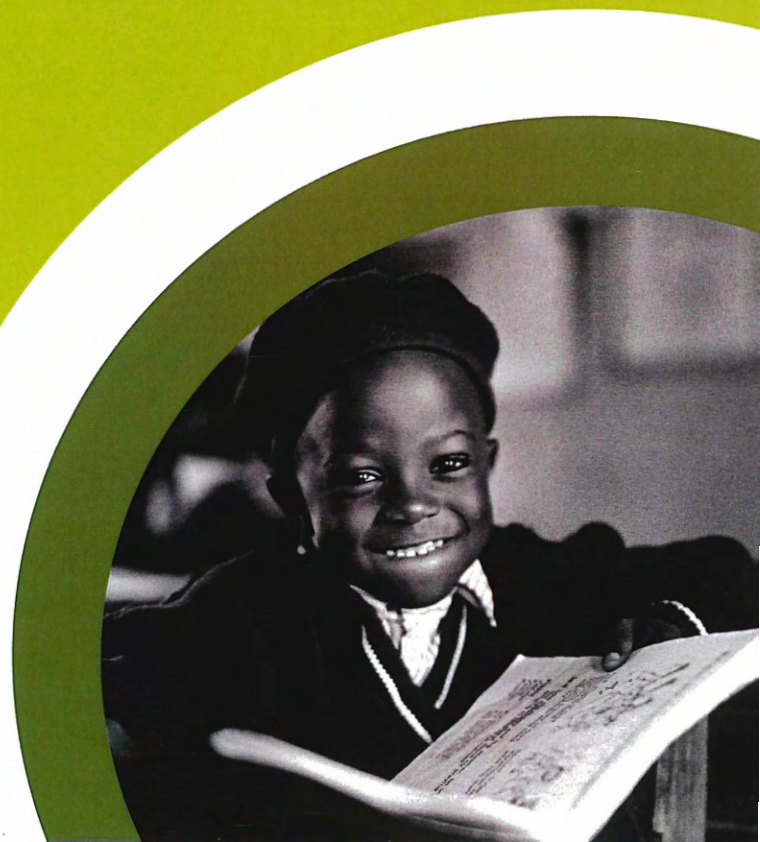# Best Practices for Developing Supplementary Reading Materials

EXECUTIVE SUMMARY

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BEST PRACTICES FOR DEVELOPING SUPPLEMENTARY READING MATERIALS

Multiple design considerations affect beginning readers' ability to process and understand text. Font type and font size, the spacing of words and letters, and the use of color are all important factors. Trim sizes and binding methods, paper weights and production modalities all play a role in text durability and costs.

The body of research available to guide choices about text format and design is small. Linguistic diversity, different characteristics of scripts, and differing country contexts complicate the development of uniform standards. However, available research and current best practice point to the general guidelines that this paper describes.

A. Font Type
- Children read books more quickly if they are printed in **simple** fonts.
- "Serif" fonts are fonts where small lines are attached to the end of a stroke in a letter or a symbol. These small lines require the eye to process additional visual cues. "Sans-serif" fonts do not include these small lines. Moreover, the uniform thickness of the sans-serif fonts corresponds to what most teachers write on the blackboard.
- **Sans-serif fonts such as Andika, Myriad Pro, ZNuscript, Arial, Cordia New, Helvetica and Levenim MT should be used for the development of supplementary reading materials for early grade readers.**
- Andika is a free font that has been explicitly designed with the beginning reader in mind and is highly recommended.

B. Font Size
- Font size influences reading speed and comprehension. Increased font size is particularly important for 5 to 7 year olds.
- An increase in letter size can improve reading speed by as much as 9 percent.
- **Depending on the readers' ability level, font sizes should be a minimum of 24 – 26 points (English/Latin Script) or 32 points (Thai/Arabic Script).**
- For texts that children will read alone with no support from a teacher or family member, the largest recommended font size should be used.

C. Word and Letter Spacing
- Unjustified text alignment is preferred for early grade reading. Texts written in Latin scripts should be left-aligned and texts written in scripts such as Arabic or Hebrew should be right-aligned.
- The more white space there is on a page, the easier that page is to read. Word and letter spacing both influence the amount of white space.
- General guidelines exist for the optimal number of words per line and number of lines per page. However, specific standards depend highly on script.
- **For learners who have not yet begun to read, a general rule of thumb is to use 3 to 4 words per line, and 4 to 5 lines of text per page.**
- Spacing should be used to help learners distinguish information chunks. A *hierarchical decrease* in spacing (e.g., four lines between main heading and subheading, followed by two lines between subheading and text) may assist learners in processing information.

D. Color
- Color attracts and motivates readers, particularly young ones.
- When using color, be consistent. To avoid visual confusion and distraction, never use more color than necessary.

- There is little agreement on the impact of color on reading _acquisition_; this is an area for potential further research.
- This study found that full-color book production can cost 10 percent more than black and white.
- Using color is a 'balancing act' between the potential positive effects of color on readers' motivation or comprehension and the additional costs involved.

E. Trim Size and Binding
- Trim size refers to the final size of paper after the excess edges have been cut off in the printing process.
- Selecting trim sizes that are matched to the exact size of the printing press to be used for production, (even if they are non-standard) can avoid paper waste and thereby reduce cost.
- Printers are able to indicate what trim size best suits their presses.
- There are four binding techniques: saddle stitching, perfect binding with hotmelt, perfect binding with sewed hotmelt, and perfect binding with polyurethane (PUR).
- Investment in **PUR binding technology** is fundamental for development of **durable, long-lasting** supplementary materials, regardless of the number of pages; however, in some contexts, it will not be locally available.
- For materials under 96 pages, saddle stitching may also be an economical binding technique; over 96 pages, it is not appropriate.

F. Paper
- Paper affects the durability, presentation and price of reading materials.
- There are 2 main types of paper: coated and uncoated.
- Reading materials should be printed on **uncoated, bond paper**; this paper is classified according to grams per square meter (a measure of durability and level of opacity).
- For the best paper price, try to buy in bulk, consider the printer's paper supplier relations and ability to hold stock or order in a timely fashion, and review the necessity and cost implications of importing.

G. Printing and Distribution
- Printing methods should be chosen in relation to the **scale of the order**.
- Local production of materials, which allows printers to build capacity as their markets expand, is increasingly feasible. If local graphic capacity is sufficient, then local production is advantageous: international costs can be avoided, book demand benefits local economies, and turnaround time is shorter.
- Medium volumes merit local offset printing, and less than 1,000 copies of smaller volumes can best be provided through a central digital hub or even the local copy shop.
- International procurement is recommended for high volume orders. Large, international printers have access to all kinds of printing presses, including those that produce huge orders cost-effectively. These will generally not be locally available because machine capacity is determined by local demand. However, international distribution costs have to be considered in the total unit price per book.

H. Digital Storage and Retrieval of Reading Materials
- Digital storage can reduce development costs and duplication of effort, and has great potential for preserving texts, facilitating in-country and cross-country access, and creating versions in multiple languages.
- Some issues that influence design and requirements of the digital platform include: access to materials, equipment, and training, software and hardware requirements, and linguistic, cultural, social and political diversity.

REFERENCES

Adeiso & Kade. (2011). iREAD vacation school report: Facilitating access to books during school vacation. Worldreader Books for All. Retrieved from: http://www.worldreader.org/uploads/Worldreader%20Vacation%20School%20Report%20Oct-2011.pdf

African Academy of Languages (ACALAN). (n.d.). Stories across Africa (StAAf). Retrieved from: http://www.acalan.org/eng/projets/staaf.php

Bannerjee, K. (2012). *A look at effective supplementary reading materials and replicability* [PowerPoint slides]. Retrieved from: http://www.globalpartnership.org/media/docs/our_work/ACR_Asia_Workshop/presentations/day2/1210_A_Look_at_Effective_Supplementary_Reading_Material_and_Replicability.Pdf

Bederson, B., Quinn, A., & Druin, A. (2009). *Designing the reading experience for scanned multilingual picture books on mobile phones.* In Proceedings of the Joint Conference on Digital Libraries (JCDL 2009), Short Paper.

Bereslim. (n.d.). Retrieved from: http://web.bereslim.nl/

Breznitz, Z. (1988). Reading performance of first graders: The effects of pictorial distractors. *The Journal of Educational Research, 82,* 47-52.

Brockman, J. (1991). The unbearable distraction of color. *IEE Transactions on Professional Communication, 34*(3), 153-159.

Brookshire, J., Scharff, L.F.V., & Moses, L.E. (2002). The influence of illustrations on children's book preferences and comprehension. *Reading Psychology, 23*(4), 323 – 339.

Buckingham, B. & Harrower, M. (2007). The role of color saturation in maps for children. *Cartographic Perspectives, 58,* 28-47.

Commonwealth of Learning. (2011). A basic guide to OER. Retrieved from: http://www.col.org/PublicationDocuments/Basic-Guide-To-OER.pdf

Creative Commons. (n.d.). Retrieved from http://creativecommons.org/about

Druin, A., Bederson, B., Hourcade, J.P., Sherman, L., Revelle, G. et al. (2001). *Designing a digital library for young children: An intergenerational partnership.* In Proceedings of Joint Conference on Digital Libraries (JCDL 2001), ACM Press, 398-405.

Druin, A., Bederson, B., Weeks, A., Farber, A., Grosjean, J. et al. (2003). *The International Children's Digital Library: Description and analysis of first use.* Retrieved from: http://hdl.handle.net/1903/1250

European Paper & Packaging Industries (2013). Coated or uncoated. Retrieved from http://www.paperonline.org/paper-making/paper-production/paper-finishing/coated-or-uncoated

Fountas, I.C. & Pinnell, G.S. (2013). Retrieved from: http://www.heinemann.com/fountasandpinnell/default.aspx.

Freedom Toaster. (2011). Retrieved from http://www.freedomtoaster.org; http://www.breadbin.co.za;

FunDza Literacy Trust. (2013). Our response. Retrieved from http://www.fundza.co.za/our-response/

Gasser, M., Boeke, J., Haffernan, M., & Tan, R. (2005). The influence of font type on information recall. *North American Journal of Psychology, 7*(2), 181 – 188.

G. John. (2013, March 7). Pratham Books is "open" for publishing. [Web log comment]. Retrieved from http://blog.prathambooks.org/search/label/Creative%20Commons

Hartley, J. (1994). *Designing instructional text* (3rd ed.). East Brunswick, New Jersey: Nichols Publishing and Kogan Page.

Hiebert, E. H. & Fisher, C.W. (2007). Critical word factor in texts for beginning readers. *Journal of Educational Research, 101*(1), 3-11.

Hoadley, E. (1990). Investigating the effects of color. *Communications of the ACM, 33*(2), 120-125.

Horton, W. (1991). *Illustrating computer documentation*. New York: John Wiley & Sons.

Hutchinson, H.B., Bederson, B., & Druin, A. (2006). The evolution of the international children's digital library searching and browsing interface, In Proceedings of 5th International Conference for Interaction Design and Children (IDC 2006), ACM Press, 105-112.

International Children's Digital Library: A library for the World's Children (n.d.). Retrieved from http://en.childrenslibrary.org/index.shtml

Keyes, E. (1993). Typography, color and information structure. *Technical Communication, 40*(4), 638-654.

Levi, D.M., Song, S., & Pelli, D.G. (2007). Amblyopic reading is crowded. *Journal of Vision, 7*(21), 1-17.

Malamed, C. (2013). 10 reasons to use color. Retrieved from http://understandinggraphics.com/design/10-reasons-to-use-color/

Marinelli, C.V. (2011). *Visual and linguistic factors in literacy acquisition: Implications for teaching for poor beginning readers*. A literature review prepared for the World Bank. Retrieved from http://www.globalpartnership.org/media/cop%20meeting/resources/textbooks/Visual%20and%20linguistic%20factors%20-%20Chiara%20Valeria%20Marinelli.pdf

Martelli, M., Di Filippo, G., Spinelli, D., & Zoccolotti, P. (2009). Crowding, reading, and developmental dyslexia. *Journal of Vision, (9)*14, 1-18.

Motshekga, A. "Statement on the Release of the Annual National Assessment Results for 2012." Republic of South Africa Basic Education Department. Ipontshe Primary School, Tembisa. 3 December 2012. Retrieved from http://www.education.gov.za/Newsroom/Speeches/tabid/298/ctl/Details/mid/1929/ItemID/3569/Default.aspx

National Information Standards Organization (NISO) Press. (2004). Understanding metadata. Retrieved from: http://www.niso.org/publications/press/UnderstandingMetadata.pdf

OutputLinks Communication Group (2003). PUR and perfect binding. Retrieved from: http://americanprinter.com/alt/pur-binding/printing_pur_perfect_binding/

Polygon Software Development. (2011). Retrieved from http://www.polygonsoftware.co.za

Praphamotripong, P. (2010). Textbook formats and visual effects on learning for beginning readers: Literature review and recommendations for the World Bank's Education for All Fast Track Initiative Project. Retrieved from: http://www.globalpartnership.org/media/cop%20meeting/resources/textbooks/Textbook%20Formats%20and%20Visual%20Effects%20on%20Learning%20for%20Beginning%20Readers-%20Prachayani%20Praphamontripong,%20PhD.pdf

Rao, K.N., Ratnamala, V., & Smith, B. (1998). Writing for change: Developing class one textbooks and readers in Andhra Pradesh, Southern India. *International Journal of Early Years Education*, 6(3), 329-341.

Ross, K. (2010). *How successful are textbook provision programmes?* Reports on the Quality of Education, Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ). Policy Issues Series number 6.

SIL International. (n.d.). Bloom: Let's grow a library. Retrieved from http://bloom.palaso.org/portfolio/

Sorrell, P. (1974). Map design with the young in mind. *Cartographic Journal,* 11(3), 82-90.

South African Book Development Council. (2006). Factors influencing the cost of books in South Africa. available on http://www.sabookcouncil.co.za/pdf/PICC_Cost_of_books_studyFinal.pdf

South African Institute for Distance Education (SAIDE). 2011. The African storybook project starting next year. Retrieved from: http://www.saide.org.za/resources/newsletters/Vol_18_no.6_2012/Content/ASP.htm

VanAuken, B. (2006). Brand identity: The importance of color. Retrieved from http://www.brandingstrategyinsider.com/2006/11/brand_identity_.html#.Ua3ZsZXfXww

Yu, D., Cheung, S-H., Legge, G.E., & Chung, S.T.L. (2007). Effect of letter spacing on visual span and reading speed. *Journal of Vision*, 7(2), 1-10.