CALL FOR PROPOSALS

GUIDEBOOK ON DIGITAL GAME DEVELOPMENT FOR EARLY LITERACY LEARNING IN DEVELOPING COUNTRIES

Released by: Digital Learning for Development (DL4D)
and All Children Reading: A Grand Challenge for Development (ACR-GCD)
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1. Introduction

Digital Learning for Development (DL4D) and All Children Reading: A Grand Challenge for Development (ACR GCD) invite all eligible organizations and individuals to submit a proposal for the development of a **Guidebook on Digital Game Development for Early Literacy Learning in Developing Countries**.

Building the ability to read, write, and understand text (literacy) requires the acquisition of the five component skills of phonological awareness, decoding and word recognition, vocabulary knowledge, oral reading fluency, and reading comprehension. Building literacy skills also requires reading practice, in which these component skills are used to make meaning of text. Unfortunately, children in developing countries are at risk of failing to build strong literacy skills because of a range of educational, structural, cultural and socio-economic factors. Digital games have the potential to engage the attention of children in ways that build skills and encourage reading practice. Children in developed countries have access to digital games that build literacy skills in their own languages, but children in developing countries do not. Unfortunately, Developers interested in making games in the languages spoken by children in developing counties have no source of information that could facilitate this effort.

This Guidebook is intended as an evidence-based practical guide for designing, developing and deploying effective digital games for early literacy learning in developing countries. The Guidebook's target audience is game developers, instructional designers, practitioners, researchers, education leaders, and international and national agencies involved in improving early-grade reading instruction. The Guidebook should describe the key principles that inform digital game development for developing country contexts in support of learning the five component skills of reading and practicing reading. The principles are expected to be at different levels: content, pedagogy, technology, and learning context. In addition, this Guidebook will feature at least 10 case studies of the use of digital games in existing early literacy learning projects. These case studies will 1) describe how digital games have been integrated into the overall early literacy intervention, 2) analyze the design of the digital games used, 3) examine how design and development processes have been managed, and 4) evaluate the effectiveness of the use of digital games in achieving their intended purpose.

2. DL4D and ACR-GCD

Digital Learning for Development (DL4D) is part of the Information Networks in Asia and Sub-Saharan Africa (INASSA) program funded jointly by the International Development Research Centre (IDRC) of Canada and the Department for International Development (DFID) of the United Kingdom, and administered by the Foundation for Information Technology Education and Development (FIT-ED) of the Philippines.

DL4D aims to improve educational systems in developing countries in Asia through testing digital learning innovations and scaling proven ones. Specifically, it seeks to:

- better understand how digital learning innovations contribute to improved educational equity, quality, and efficiency in developing countries in Asia;
- foster international collaboration and partnerships on digital learning innovation research in developing country contexts in Asia and the rest of the world in order to expand the reach, scope, and impact of the DL4D network; and

- scale proven digital learning innovations through contributing to educational policy-making and action at national and sub-national levels in developing countries in Asia.

All Children Reading: A Grand Challenge for Development (ACR-GCD) seeks to identify and analyze the effects of technology on early grade literacy rates in developing countries to optimize the allocation of resources, inform decisions, and enhance solutions. Launched in 2011 by the United States Agency for International Development (USAID), World Vision, and the Australian Government, it is an ongoing series of competitions that leverage science and technology to create scalable solutions to improve literacy skills of early grade learners in developing countries.

3. Background on reading instruction

Reading is a set of five component skills–phonological awareness, decoding and word recognition, vocabulary knowledge, oral reading fluency, and comprehension–that can and should be learned separately, but it is also an activity that requires students to integrate all those skills to perform tasks (such as reading for entertainment, for answering a question, for engaging in a discussion with others, or for completing a work activity) with print or digital text. Good readers efficiently and effortlessly integrate multiple, discrete component skills in order to make meaning from text. A good reader immediately processes the visual information presented in the form of letters and can instantaneously use this visual processing to call up information about sounds that the spelling patterns represent and to immediately activate knowledge about word meaning and use.

Children learn best through instruction and practice in the component skills of reading, along with practicing reading by employing all five component skills to accomplish tasks with text. Teaching that focuses on components only, without reading practice, does not provide sufficient support to children so that they can develop into good readers. The tasks and the texts should be chosen to challenge students to improve their reading; they should not be too difficult for them and should also be interesting and enjoyable. Teachers should teach the component skills by starting with easy, simple skills and then slowly introducing more difficult, complex skills.

Five component skills of reading

Phonological awareness is the ability to recognize the different sounds of spoken words, parts of words (syllables), or phonemes (the smallest unit of sound in a language). Recognizing phonemes is more difficult than recognizing syllables, but phonemic awareness is crucial to word recognition. Instruction that builds phonemic awareness is most effective when 1) children are taught to manipulate sounds with letters, 2) lessons are short and frequent, and 3) children are taught in small groups.

Decoding refers to the ability to connect phonemes to letters in order to sound out unknown words. Because some languages, such as English, preserve the historical origins of words at the expense of clear sound-to-letter relationships, decoding requires knowledge not only of those relationships but also of unusual clusters of letters (such as –*ight* in n*ight* and r*ight*). ***Word recognition*** refers to the rapid and effortless ability to read whole words, or word parts, after patterns have been encountered in print a sufficient number of times to allow for automatic retrieval from memory. This automatic reading of individual words out of context is critical for effective reading and is highly correlated with reading comprehension outcomes. Multiple encounters with words and letter patterns enable readers to retrieve words as whole units, freeing them from the need to decode those words, even words that are

spelled phonetically. Children with weak decoding and word recognition skills may rely on contextual information as a primary strategy for reading words. Because they over-rely on context, these children make more errors in word recognition, and they exhibit lower levels of comprehension.

Teaching decoding and word recognition is most effective when children are systematically taught the relationships between sounds and letters, referred to as phonics instruction. Moreover, sight word instruction (introducing words as whole units rather than analyzing their letter-sound correspondences) is also a critical part of early reading instruction, particularly in languages such as English, since many of the highest frequency words are not decodable using a set of rules (for example, *one*). Decoding in many mother tongue languages is easier because the sound-to-letter (or sound-to-letter combinations) relationship is less complicated than in some official languages, such as English. This makes learning to decode in some languages easier; however, for children to read fluently, they must be able to both automatically decode unfamiliar words and automatically recognize familiar words.

Vocabulary knowledge is the understanding of the meanings of words and their uses in varying contexts. A strong relationship between vocabulary knowledge and reading comprehension is well-established in the literature on learning to read. However, different kinds of vocabulary instruction lead to varying degrees of reading comprehension. Specifically, vocabulary instruction that focuses on definitions is less effective at supporting comprehension than vocabulary instruction that strives to explore word meaning and usage in several contexts.

Oral reading fluency is reading with speed and accuracy, but it also includes reading with the correct stress, intonation, and prosody (the pauses and emphasis in oral language that are often necessary to understanding). The development of oral reading fluency is critical because even students who are reading with a high degree of accuracy may have trouble understanding what they read if they are reading too slowly or with poor stress, intonation, and prosody. Effective fluency instruction involves oral reading of text at a level of difficulty that is comfortable for a student or just slightly above that level. A student should be encouraged to read the same passage several times, each time trying to come closer to the oral reading demonstrated by a teacher.

Reading comprehension occurs when readers actively work to make sense out of what they are reading by constantly integrating what they are learning in the text with what they know from their own experience and accumulated knowledge. Learners should be taught how to build a model of the text in their minds. In other words, in order to construct the meaning of what they are reading, children must learn how to pay attention to whether what they are reading makes sense to them. From this perspective, one of the most important things for students to learn is how to develop self-monitoring habits. Active comprehension strategies for self-monitoring should be taught by demonstration and description to help children understand the active thinking processes that make comprehension possible. Learners can demonstrate deep comprehension by talking about how they are making sense of what they read and by answering questions about or discussing text events, information, characters, actions, and thematic elements of a text.

Learners will only develop strong component skills and practice reading if they are motivated to do so. Reading instruction, therefore, should be fun, interesting, challenging, and satisfying and provide students with feedback about their progress. One important goal of reading instruction is to instill in each child a love of reading.

4. General specifications of the Guidebook

The Guidebook should be approximately 50 pages, excluding references and appendices. The Guidebook must contain, but is not limited to, the following sections:

- Rationale, statement of purpose and intended use, and description of intended users of the Guidebook
- Review of literature on digital-game based learning on early literacy and related fields with a focus on instructional models and design elements
- Framework for analyzing and evaluating digital game-based learning on early literacy specific to developing country contexts
- Case studies of early literacy digital game-based learning projects in developing countries. Digital games will be described, analyzed and evaluated in terms of:

  - learning objectives and targeted component skills or sub-skills;
  - language and language-related features;
  - instructional design including appropriateness to the age group, possibilities of students' independence to learn, cognitive development, gamification of learning tasks, level of learner control, conditions of collaboration, sophistication of scaffolding, and approaches to assessment;
  - game design, mechanics and functionalities including level of complexity of gameplay, visual realism, clarity of rules, feedback and reward system, and adaptation of challenge levels;
  - game development process and issues including socio-cultural considerations, media of delivery, and technical (hardware, software, connectivity) requirements; and
  - cost analysis of development, deployment, and maintenance.

  The featured cases should be identified from the literature review. DL4D and ACR-GCD may also suggest projects for inclusion. Highlights of the featured cases should be discussed in the main body of the Guidebook with the full case studies included as appendices in a common format.

- Guidelines for game design, development and implementation in a developing country context
- Suggested supplementary references and resources
- Areas for further research

5. Project duration and funding scope

The research project must be completed within eight months and should cost no more than USD 50,000. The research should draw on existing documents, interviews and direct experience with games. No field testing of games is required.

Payments will be made upon submission and acceptance of the following required deliverables:

- Annotated outline of the Guidebook – 25% of the total budget
- First draft of the Guidebook and interim technical and financial report – 50% of the total budget
- Final Guidebook – 15% of the total budget
- Final technical and financial report – 10% of the total budget

6. Eligibilities

Institutions and individuals with the capacity to conduct research are eligible for this grant. North-south collaborations are encouraged. The Research Team should have expertise in early literacy learning, ICT in education in developing countries, game development and cost analysis.

7. Selection criteria

Proposals will be assessed against criteria described in the table below.

Criterion	Weight (%)
Approach and Methods • Clear articulation of the target audience and uses of the Guidebook for digital game development. • Critical review of up-to-date knowledge on digital-game based learning on early literacy and related fields with a focus on instructional models and design elements. • Robustness and appropriateness of the framework for analyzing and evaluating digital game-based learning on early literacy specific to developing country contexts. • Clear description of methods and rigor and appropriateness of methods for developing the Guidebook that is relevant to the developing country context • Clarity and soundness of the work plan, with activities aligned to objectives. • Clear deliverables and a realistic time frame.	25
Team Composition, Expertise and Experience • Ability of the team's distributed expertise and experience to successfully deliver the Guidebook on Digital Game Development for Early Literacy Learning in Developing Countries. • Credible track record of the project team in the digital game-based learning and early literacy areas. • Experience of the project leaders in managing complex projects including strong administrative, communication and collaboration skills.	25
Issues and Challenges • Recognition of key issues and challenges of developing the Guidebook. • Ability of the team to address the identified/stated issues and challenges.	10
Expected Output • Adequacy and appropriateness of summary or table of content to achieve the intended purpose of the Guidebook and meet the needs of the target audience. • Innovativeness of how the Guidebook may be presented in multiple modalities and how it may be disseminated to its main audience.	30
Budget • Reasonableness, realism and completeness of proposed costs.	10

8. Selection process

Proposals submitted under this Call will be reviewed and assessed by a panel of specialists. Final funding decisions based on the review and recommendations of the Panel will be made jointly by FIT-ED, IDRC, World Vision and USAID. Proposals will be either accepted or rejected. The accepted proposal may receive specific comments from the Panel which the proposing institution or individual is required to satisfactorily address before the grant is awarded and a grant agreement signed. FIT-ED reserves the right to cancel the grant application process at any time without prior notice and/or to not award a grant under this process at its discretion.

9. Selection timeline

- Release of Call for Proposals – 22 June 2016
- Deadline for submission of proposals – 5:00 PM, 8 August 2016 UTC/GMT +8 (Philippine time)
- Review of full proposals by the Panel – 9 August to 31 August 2016
- Panel review results communicated to applicants – 1 September 2016
- Proposal revision and finalization/Internal project approval and granting processes – 1 to 30 September 2016
- Project commencement date – 3 October 2016

10. Proposal requirements and format

Applicants are required to submit a 1) technical proposal and 2) cost proposal, along with a completed General Information Form (*Appendix A)*

Technical proposals must include the following sections:

- Title page
- Table of contents
- Abstract – maximum of 300 words (start page 1 here)
- Approach and Methods
  - Explain your proposed approach to the Guidebook as well as the associated methods you will use given the Guidebook's intended purpose, target audience and general specifications.
  - Present a work plan (key development phases, activities, outputs and inclusive months)
- Team Composition, Expertise and Experience
  - Describe how the composition, expertise and experience of your team will enable the successful delivery the Guidebook
- Issues and Challenges
  - Highlight the key issues and challenges of developing the Guidebook.
  - Explain how your team intends to address these issues and challenges.
- Expected Output
  - Develop a content summary or table of contents of the Guidebook with brief descriptions of proposed chapters/sections/sub-sections.
  - Suggest how the Guidebook may be presented in multiple modalities and how it may be disseminated to its main audience.

Required annexes

- A description of the roles, responsibilities, and time commitments of the Project Leader/Principal Investigator and Co-Investigators.
- Detailed CVs of the Project Leader/Principal Investigator and Co-Investigators. CVs must include a listing of related research and publications.
- At least two samples of related work (e.g., published articles, research reports, academic/technical papers, policy papers, etc.) of each Investigator.

Additional requirements for institutions:

- A one-page profile of each institution involved in the development project (proposing, collaborating and participating).
- A past performance profile of the proposing institution listing up to five programs or projects within the past five years that are related to the development project.

Technical proposals must directly address each of the selection criteria listed in Section 7.

Technical proposals must be written in English. They must not exceed 10 pages (excluding the title page, table of contents, references, and annexes), formatted as follows:

paper size: 8-1/2" x 11"
margins: 1" all around
font: Calibri, 11 points
spacing: single
pagination: continuous, starting at page 1 on the abstract page

Pages that exceed page limits will not be evaluated.

Cost proposals must be presented using the Cost Proposal Form (*Appendix B).*

11. Submission process

Full proposals (technical and cost) with all the required annexes must be submitted by email to **dl4d@fit-ed.org** on or before **5:00 PM, 8 August 2016 UTC/GMT+8 (Philippine time)**. Incomplete proposals or proposals received after this deadline will not be considered.

All inquiries regarding this Call should be directed to vltinio@fit-ed.org.

12. Country clearance requirements for applicant institutions

IDRC has conducted general agreements for scientific and technical cooperation with a number of governments. These agreements establish the framework for IDRC cooperation with that country by defining the rights and obligations of both IDRC and the government. As such, any applicant institution selected to receive funding may be required to obtain country approval in accordance with these agreements prior to receiving funding from IDRC. Prospective applicants are encouraged to familiarize

themselves with their respective country clearance requirements and take these into account in their research planning.

13. Standard grant terms and conditions

An applicant institution or individual selected for funding shall be required to sign IDRC's standard grant agreement. A sample of IDRC standard grant agreement terms and conditions is available here: http://www.idrc.ca/EN/Funding/Guides_and_Forms/Documents/MGC-Att-A-e.pdf

14. Open access policy

IDRC believes that publicly funded research should be freely and openly available. All IDRC-funded projects must adhere to IDRC's open access policy, which may be viewed at: http://www.idrc.ca/EN/Misc/Pages/Open-Access-Policy.aspx. Research proposals submitted to IDRC must include an open access dissemination plan.

15. Permission for use and disclosure of information

By submitting a proposal under this call, the applicant consents to the disclosure of all submitted documents to the Technical Panel and others from FIT-ED, IDRC, World Vision, USAID and third parties who are involved in the review and selection process. If selected for funding, the applicant further consents to the disclosure of the name of the applicant, the name of the Project Leader, and the title of the proposed project in any announcement of selected projects.