USAID
FROM THE AMERICAN PEOPLE

EdData II
Education Data for Decision Making
www.eddataglobal.org

Improved Learning Outcomes in Donor-Financed Education Projects: RTI's Experience

Introduction

In the past decade or so, RTI has been accumulating results-based information on how to produce specific learning outcomes. The documentation covers projects RTI has implemented, projects it has evaluated, and projects it has used as inspiration.

These documented results leave little doubt that it is possible, in a time frame even shorter than the average donor project, to produce significant, measureable improvement in children's learning outcomes—on the order of doubling, tripling, or even quadrupling children's outcomes. Furthermore, the potential is greatest if baseline performance is low and if there is a specific focus on a limited set of objectives, such as early grade reading. Having multiple objectives—such as covering a variety of subjects and grades, or reading in a variety of languages—increases the complexity, and no organization that we know of has experience demonstrating rapid and significant changes when the objectives are far more complex. In either case, however, achieving results requires time, careful planning, and the use of methods that have proven effective and that may not always align with conventional wisdom or current programs.

Systematic Method for Reading Success (SMRS), South Africa. Photo: RTI project staff

This brief summarizes evidence we have compiled to date on "what works" to improve learning outcomes. The key lessons are based on evaluations of eight project experiences. Six projects involved direct implementation by RTI, one is being implemented by an African nongovernmental organization (NGO) and evaluated by RTI, and one has inspired RTI. Together they show that a variety of approaches can produce results, as long as they are strictly oriented toward achieving results. That said, with only one exception (The Gambia), these results are being achieved in schools that are under controlled circumstances (that is, working under a donor "project"). Generalizing the results to an entire education system is a frontier that, to our knowledge, no NGO implementing United States Agency for International Development (USAID) projects has experienced.

In the next section we summarize three key lessons that we feel all these experiences have in common. The third section of the brief presents an overview of the eight project experiences, to show the range of activities on which these lessons are based, and the range of sizes of outcomes produced.

Lessons Learned

The three key lessons we have learned are as follows.

The focus on learning outcomes has to be the driving concern. Process, ideology, academic pedagogical theories divorced from content, favorite practices, received wisdom, and the usual array of other outcomes (e.g., parent-teacher associations strengthened, education management information system developed) all need to be secondary if the goal is improved learning outcomes. (Those other objectives may be worthwhile on their own, but that is a different issue.) Rather, we need to expend our energy on "what works."

Such a tight focus on learning outcomes may occasionally require giving up on long-funded but largely unproven pedagogical approaches, particularly when it comes to students in low-income countries acquiring basic skills. Integrating reading instruction into other subjects, for example, should not take the place of focused instruction on reading as a subject on its own, in a grade-appropriate manner.

There are five specific instructional requirements. We mnemonically refer to the requirements as "the five T's": time use, teaching technique, texts, tongue of instruction, and testing. To elaborate:

A. *Time devoted to learning*—that is, time explicitly devoted to instruction in specific subjects, such as reading—is key. Time is wasted and children have very little opportunity to learn when

   1. the theoretical school year and school day are too short,
   2. schools have to teach in double shifts,
   3. educators go on strike,
   4. teachers have to leave the school to engage in bureaucratic transactions,
   5. instruction stops for "planning" and even in-service training (if the training is of poor quality or not highly relevant),
   6. both teachers and students are absent,
   7. the available time in the school day is poorly managed,
   8. time devoted to focused instruction within the classroom is limited and of poor quality, and
   9. curricular guidelines reduce time devoted to direct instruction on skills.

   In short, too many classrooms in the developing world simply spend too little time on focused instruction. In the projects we manage, we strive for focused and efficient use of time.

B. *Better teaching technique*. A familiar refrain in many countries, particularly in Africa, is that teachers are not taught how to teach. In particular, our experience has shown that they are not taught how to actually teach reading. Rather, teachers are under-supported with content knowledge and techniques that work and oversupplied with vague theories or methodologies. If teachers are trained in reading instruction, the training is too often theoretical rather than practical, and no one models for the teachers how to introduce children to basic skills such as phonics or comprehension. In our experience, practical support, not theory, is what teachers need and are asking for.

   In the projects we have implemented, we emphasize content knowledge and teachers' practice of specific pedagogical skills, down to the use of routines for teaching and assessing students' understanding of text, before they can even read a single word. We want to directly involve children in learning, and to create interaction between teachers and children that is as intense, positive, and content-rich as possible. Furthermore, when the results demonstrate that the teachers need it, we provide teachers with scripted and prescribed daily lesson plans. Although some would decry such practices as "de-professionalizing" the teacher, untrained and low-skilled teachers overwhelmingly welcome such practical support. Moreover, once teachers become experienced, confident in their own abilities, and knowledgeable of how to teach, the script becomes less necessary.

EdData II / EGRA Plus: Liberia. Photo: RTI staff

C. *Materials provision ("texts" for short)*. Thanks to the efforts of governments and international agencies, children in many countries now have access to some form of learning materials in the classroom. Unfortunately, these are often insufficient, expensive, and poorly designed from a pedagogical cost-effectiveness point of view because they fail to apply research findings about effective learning at different stages of academic achievement. The effects of factors such as amount of color, the ratio of pictures or graphics to print, and the cost of glossy paper for books are poorly understood. For example, do these features really add to durability, and is durability more important than variety and amount of materials? Yet many donor projects tend to see expensive, glossy books, with high graphics content and much use of color, as innovative and necessary. International competitive bidding requirements and perverse government tariffs (e.g., import taxes for paper but not for finished books) further undermine the development of sustainable local publishing. All these factors raise cost, without much evidence that this increase in cost is worthwhile in terms of producing learning outcomes.

   In contrast, in projects we have implemented, we aim to provide sustainable, locally produced, abundant, and inexpensive materials so as to dramatically improve the print environment and prevent hoarding by school staff ("preserving" materials to such an extent that children never have access). The materials are directly integrated into the lesson plans so as to greatly increase the probability that teachers will use them. In addition, we supply

materials that are "off lesson" to foster a culture of reading for enjoyment.

EdData II / EGRA Plus: Liberia. Photo: RTI project staff

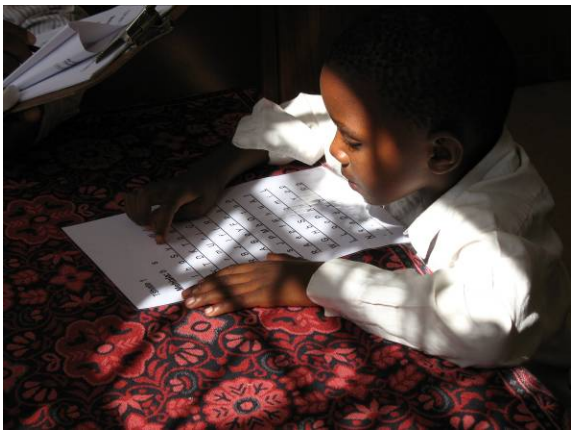
D. *Tongue of instruction.* Research and our project experience show that children provided with materials and instruction in their mother tongue learn faster and more deeply than children whose instruction starts with a language that is foreign to them. Of course, this claim assumes that the instruction in mother tongue is of reasonable

SMRS, South Africa. Photo: RTI consultant

quality. If it is, skills developed in mother tongue will later transfer (more effectively with explicit instructional strategies) to the acquisition of other languages. Mother-tongue instruction is not always popular, however, as parents and communities often mistakenly think that instruction solely in a foreign language (usually a colonial language) is the only way for their children to become literate in that language, which they see as the goal of schooling and tend to value more because of its association with formal sector employment and modernization. Therefore, parents need information to understand that becoming literate in one's mother tongue allows children to learn content easily and greatly facilitates learning in another language.

Because mother-tongue instruction has been underemphasized, particularly in Africa, and has been provided in a shoddy manner in most of the world (e.g., materials are grossly insufficient and not often of good quality, while teachers are poorly trained to use them), the results are not always good (although almost always better than the results in a foreign language). The lack of marked improvement makes it harder to break the popular perception that instruction in mother tongue is not valuable. Critics also frequently use the linguistic complexity of some African classrooms as a convenient scapegoat for poor-quality instruction in general and mother-tongue instruction specifically, rather than identifying context-specific solutions and focusing time and effort on improving materials and teacher training. Specific actions therefore need to be taken to inform parents and others about the benefits of mother-tongue education, while time needs to be invested to develop effective programs and materials.

E. *Measurement ("testing" for short).* A tight focus on learning outcomes requires measurement of the results produced. The majority of our projects, and those we have evaluated or been inspired by, have used extensive measurement in various creative ways. Oral measurement through early grade reading assessments (EGRA), for instance, has been



SMRS, South Africa. Photo: RTI project staff

a welcome innovation for measuring reading outcomes in the formative years both at the national and classroom levels. Hallmarks of the use of measurement for results are that it has to

1. be useful to those who supervise the teachers;
2. be directly useful, transparent, and easy for the teachers themselves to inform their own instruction; and
3. underpin communication with parents and communities, as well as national politicians.

There must be a climate of accountability. Doing all five "T's" properly requires skill, devotion, discipline and hard work. Thus, it also requires tight management, governance, and accountability. Donor projects can supply all three, in an experimental fashion, to "prove" to governments that learning for all—and in particular reading for all—is possible. But once the project is removed, the reforms introduced often fail to be replicated, precisely because the managerial and governance conditions required are not yet systemic in lower-income and lower-middle-income countries. Thus, a key task for donors and NGOs is to promote systemic change so that the sorts of practices that do lead to improved learning outcomes are sustained.

Evidence Base from Projects

The evidence base from which we derive these lessons is drawn from the following projects.[1]

Early Grade Reading Assessment (EGRA) Plus: Liberia

At the request of the Liberian Ministry of Education, USAID supported the design and implementation of EGRA Plus through implementing partners RTI International and the Liberian Education Trust. It was both an intervention and a randomized control trial. Two levels of intervention—a "light treatment" and a "full treatment"—were applied in schools and then compared against a control group of schools that followed the standard reading instruction approach in Liberia. In the light treatment group, reading levels were tested and schools were informed of the results and shown how to share them with the community through report cards. This minimal intervention was designed to test an "accountability" hypothesis—to evaluate whether simply receiving information about students' reading levels would motivate teachers and parents to focus on reading instruction and lead to student reading gains. In the full treatment group, reading levels were assessed; parents and communities were informed; teachers were trained on how to continually assess student performance; and teachers were provided frequent school-based teaching support, specified lessons plans, resource materials, and books for students to use in class and take home.

The EGRA Plus experiment was conducted in grades 2 and 3 in 180 schools divided into three groups of 60, corresponding to the light treatment, full treatment, and control groups. The program began in January 2009, and the final evaluation took place in June 2010. RTI found that students in the full treatment group outperformed their peers in all reading skills. They nearly tripled the gains made by the control group in oral reading fluency and reading comprehension. The full treatment group also increased nonword fluency sevenfold, indicating that EGRA Plus had a particularly large impact on improving children's decoding—the ability to break new words into sounds and link them together—which is a key intermediate step to unlocking fluency and comprehension. The overall effect size of the intervention was 0.79 standard deviations (SD), considered large for social science efforts.[2]

EdData II / EGRA Plus: Liberia. Photo: RTI project staff

District Development Support Program (DDSP) and Integrated Education Program (IEP) (South Africa). These consecutive large-scale projects, implemented from 1998 to 2009 by RTI, covered a broader range of grades, subjects, and schools in a more diffuse way than other projects summarized here. They also tended toward a "whole school" approach rather than a purely pedagogical approach. They did enhance time use, teacher content knowledge and skills, assessment, and community participation; instruction in mother tongue was not a heavy focus.

Overall, learner performance increased 17% in literacy and 38% in numeracy in IEP across provinces and cohort groups (compared to targets of 2%–8%), and DDSP produced approximately a 40% gain in numeracy. Project evaluations found that use of structured lessons, student workbooks, and assessment practices (e.g., use of item banks) played a key role in driving results.

Breakthrough to Literacy (BTL) (Zambia). This project was financed by the UK Department for International Development (DFID) and implemented by the Molteno Institute of Language and Literacy (a South African NGO) between 1999 and 2005. It focused on simple, tightly focused interventions in reading, using dedicated time, mother-tongue instruction, provision of

[1] For complete reports on the projects, please visit the EdData II project website, https://www.eddataglobal.org.

[2] Effect size is a simple way of calculating the difference between two groups; in this case the average child in the treatment group outperformed the average child in the control group by 0.79 SD, and therefore exceeded the scores of 78% of students in the control group.

training and materials, and very simple but focused measurement of results. Children's reading scores, which admittedly started with a low base, improved in the range of 300% to 500% in just a few years.

Malindi District Experiment (Kenya). This small activity, which used a randomized design with pre- and post-treatment measurement, was funded by USAID and implemented by Aga Khan Foundation and RTI. The activity used simple, scripted lessons to improve reading in English and Kiswahili. It resulted in learning outcome improvements in the range of 80% in key reading skills

Malindi District Experiment, Kenya. Photo: RTI staff

such as fluency in reading connected text. The project generated surprising results in the control schools as well, which, upon further research, may have been caused by the transference of techniques demonstrated as effective in the treatment schools to control schools. While this "polluted" the rigor of the evaluation, it also demonstrated that if lessons and techniques are sufficiently structured and practical (as opposed to theoretical), and have sufficient impact that it is visible to teachers and principals, the innovations can spread. This was a key lesson of this project, although its applicability probably depends on the existence of a climate of accountability and a tendency to focus on outcomes, which was present in Kenya.

Systematic Method for Reading Success (SMRS) (South Africa). This activity, implemented under the Integrated Education Program discussed above by RTI in collaboration with the Molteno Institute of Language and Literacy, also used control and treatment groups, as well as pre and post measurement. Instructional improvements focused on time use, mother-tongue instruction, simplified materials, and use of step-by-step lesson templates.

SMRS, South Africa. Photo: RTI consultant

Implemented for *less than a year*, this activity showed that even in such a short period, children in treatment schools could learn two to three times faster than children in control schools. The effects were subjected to rigorous statistical analysis, and in terms of effect sizes showed an impact of around 0.8, considered very high in education research and interventions, especially if produced in less than one year (albeit from an extremely low base, as the grade targeted was grade 1).

Read-Learn-Lead (RLL) (Mali). The *Institut pour l'Education Populaire's* program is funded by the William and Flora Hewlett Foundation and evaluated by RTI. Key elements are (1) tightly designed daily lesson plans covering the essential steps of effective reading instruction, (2) the use of mother tongue, and (3) focused time for reading instruction. Despite an extremely difficult environment (strikes, curricular confusion due to simultaneous and unfinished curricular reforms, nonprovision of learning materials by the government, lack of accountability and certainty), this project has managed to produce improvements of several hundred percent in only one year of intervention, with an overall effect size of around 0.4 (0.25 is considered a good benchmark for significant impact).

Early Grade Reading Intervention (The Gambia). In early 2007, the World Bank and the government of The Gambia partnered to conduct an early grade reading assessment in English of students in grades 1–3. From a sample of 1,200 students across 40 schools, nearly two-thirds of the students were unable to read even a single word from a simple paragraph. In response, the government implemented a series of activities to improve reading performance among its nation's schoolchildren. The three-pronged approach included (1) the creation of a national task force to identify gaps in instructional materials and teacher training; (2) the design and implementation of a nationwide in-service training of teachers

2007 EGRA, The Gambia. Photo: RTI staff

in grades 1–3 and their monitors; and (3) the development of a *Handbook of Teaching Early Grade Reading Activities,* used to conduct the nationwide trainings.

In 2009, the Ministry of Education administered a second early grade reading assessment to inform policy makers, curriculum developers, development partners, and practitioners on the impact of the interventions that had been implemented since 2007. Based on a sample of the same schools that participated in the 2007 assessment, the results showed a significant, positive impact on students' overall mean reading scores, including an increase in the overall mean score for every early grade reading indicator tested. Comprehension results (measured as the percentage of children attaining at least 80% comprehension) improved by more than 600% for girls (a 23.3 percentage point increase), while boys improved their performance by some 200% (a 10.6 percentage point increase).

Girls' Improved Learning Outcomes (GILO) (Egypt). The USAID GILO project conducted an early grade reading assessment in Arabic with students in grades 2, 3, and 4 in Upper Egypt in 2009. The assessment revealed that while nearly half of grade 2 students met the benchmark for identifying letter names, 50% could not identify a single letter sound. Identifying letter sounds is more crucial to decoding and reading words than knowing the letter names. Consequently, more than half of grade 2 students could not read a single word in isolation. In grade 4, 29% of students still could not read a single word. To address this weakness, GILO designed a package of reading lesson plans that improved the teaching of phonics—identifying letter sounds—using cognitive engagement techniques and supported by instructional materials.

GILO rolled out the training to selected teachers in all four project-supported governorates before the start of the 2010–2011 school year. The project conducted a follow-up EGRA at the end of the school year to measure the impact of the enhanced teaching method on student learning, assessing all of the same schools from the first EGRA, including a set of control schools. Preliminary analyses of the impact of the intervention indicate that the enhanced reading instruction resulted in significant improvement for the GILO-supported schools. On average, students in GILO-supported schools identified 19 more letter sounds per minute at the end of the school year, an increase of 194% over baseline. Meanwhile, students in the control group gained just two letter sounds per minute, an increase of only 21% over baseline. The impact of the instruction on students' passage reading fluency was also dramatic: an average of 10 more words read per minute—an increase of 82% over baseline—compared to three more words read per minute among the control group—an increase of 38% over baseline. And this occurred in spite of the fact that the students were out of school for six weeks in the spring semester during the Egyptian revolution, indicating that they had retained what they learned.

GILO, Egypt. Photo: RTI project staff

More Information

Penelope Bender, USAID Contracting Officer's Representative, pbender@usaid.gov

Amy Mulcahy-Dunn, Project Director, amulcahy-dunn@rti.org
Jennifer Spratt, Senior Technical Advisor, spratt@rti.org
Amber Gove, Team Leader, Teaching & Learning, agove@rti.org
RTI International
P.O. Box 12194
3040 Cornwallis Road
Research Triangle Park, North Carolina 27709-2194, USA

EdData II is implemented by RTI International, EHC-E-00-04-00004-00, September 2004–November 2016. Ordering period end date: August 31, 2014.