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Working Toward a More Literate World: Reading Intervention Commentary

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Abstract

This issue of New Directions for Child and Adolescent Development *summarizes recent and ongoing work to establish evidence-based practices in early reading instruction and intervention and to improve access to and quality of literacy programs in low- and middle-income countries. The authors describe projects of varying sizes and goals, conducted in multiple sites in Africa, the Middle East, Asia, and Latin America. What is immediately striking is the commitment to documenting the efficacy and effectiveness of these programs using wherever possible the methodological standards of intervention science and education research. Often thousands of children and hundreds of schools have been included despite the challenges involved. Data from these projects have informed plans for future programming in these countries, and results from large scale-ups have provided insight into the most important factors necessary for scale-up and sustainability. In this article, I present, in the context of an overview of the sum of these articles, my own thoughts on their importance and implications.*
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This issue of *New Directions for Child and Adolescent Development* summarizes recent and ongoing work to establish evidence-based practices in early reading instruction and intervention and to improve access to and quality of literacy programs in low- and middle-income countries (LMICs). Projects of varying sizes and goals are described, conducted in multiple sites in several countries in Africa, the Middle East, Asia, and Latin America. What is immediately striking about the reports is the commitment to documenting the efficacy and effectiveness of these programs using wherever possible the methodological standards of intervention science and education research, that is, controlled evaluations, cluster random assignment, objective measurement, and longitudinal designs. In many projects, thousands of children and hundreds of schools have been included despite the very real challenges involved in conducting research in low-resource settings and in the face of great need. Data from these projects have informed plans for future programming in these countries, and results from large scale-ups have provided insight into the most important factors necessary for scale-up and sustainability.

Despite substantial investment and ambitious initiatives supported by the U.S. Agency for International Development (USAID), the World Bank, and the Department for International Development in the United Kingdom (DFID), and those of countless smaller donors, 30% of youth in Sub-Saharan Africa remain illiterate (UNESCO, 2013) and more than 60% of grade 3 children in many low-resource countries remain unable to identify a single word of grade-level text. Access to early education has improved substantially in many countries with the investments of the past 3 decades. There are troubling indications, however, that access and quality are two quite different indicators of meaningful education reform in LMICs.

Access vs. Quality in Early Reading Programs in LMICs

Moore, Gove, and Tietjen (Article 1, this issue) and Crouch and DeStefano (2015) describe the very significant challenges faced by the development community in attempting to build capacity for teaching foundational literacy and numeracy skills in LMICs and to make progress toward the UN's Sustainable Development Goals (United Nations, 2015). The magnitude of change necessary in many countries is staggering, estimated at improvements of 1–2 standard deviations (SD) in learning outcomes (Bruns & Luque, 2015; Moore et al., Article 1). By comparison, in better resourced countries, instructional gains of ½ SD are considered very sound, and a full SD change is considered sizable. To deliver changes of two standard deviations, high-intensity programs, implemented with high fidelity and teacher skill, would need to be provided for more than 1 year, and children and teachers would have to be reliably present to participate. Moore and colleagues highlight programs that have reported larger-than-usual effect sizes, including Save the Children's Literacy Boost Program; the RTI

International programs in Egypt, Kenya, and Liberia; and Room to Read programs. These effect sizes, ranging from 0.22 to 0.91, were attributed to intervention projects emphasizing direct and explicit instruction of early reading skills and delivering the substantial support and coaching necessary to allow local teachers to provide such instruction.

Crouch and DeStefano (2015) argue that moving an education system to the point where it can reliably deliver improved learning outcomes is all about building operational capacity. Enrollment and access to schooling alone are not producing desired levels of learning improvement, likely because they were not accompanied by the scaffolding practices at the classroom, school, and district level needed to effect the substantial changes in teaching practices necessary to improve children's outcomes. Moore and colleagues identify a framework, developed in 2014 by the Basic Education Coalition Working Group for Monitoring and Evaluation, for understanding what makes a difference in going to scale; other authors in this issue adopt this framework to describe their experiences. The framework highlights three factors important to implementation success: (a) the dosage of implementation and intervention (including intensity and frequency of the intervention and the fidelity of its implementation), (b) the duration (longer is better), and (c) the extent to which the environment is enabling and facilitative.

What Is Possible in the Lowest Resource Countries?

Burchfield, Hua, Noyes, and van de Waal (Article 7) describe working to improve early reading outcomes in Mozambique, one of the poorest countries in the world (ranked 178 of 182 countries in level of poverty by United Nations Development Programme, 2014). Among the first obstacles to improving educational outcomes in this country were low school enrollment, high poverty, impassable roads, and deteriorated or nonexistent schools. After a prolonged civil war, access to education became a priority but, where schools existed, they were handicapped by inadequate supplies, few books, and poorly qualified teachers. As enrollment increased at a rate of 8% a year (USAID, 2015), schools coped with crowded conditions, often running two shifts a day.

In 2012, with support from USAID, World Education Inc. partnered with the Ministry of Education and Human Development (MINEDH) in Mozambique to develop a reading program for grades 2 and 3, with initial implementation in two provinces and 120 schools. Following impact evaluation, the program scaled up to include another 2,000 teachers in 538 schools. The program included school management training designed to reduce absenteeism (teacher and student) and tardiness and thereby increase instructional time. The program was evaluated using a design that compared outcomes from full and partial intervention schools with those from untreated control schools, a commendable achievement in what is

described as "an impoverished but determined country" (Burchfield et al., Article 7). Intervention schools outperformed controls on several measures of early reading; the authors identify what they consider three contributing factors:

1. Availability of reading materials; when classroom observations occurred, 80% of intervention children (but only 10% of controls) had reading books they were using.
2. Teacher and student attendance; the absentee rate for students was typically 58% and for teachers 24%. In addition, school start was delayed in intervention schools by 24 minutes on average and in control schools by 46 minutes. Absenteeism and tardiness are obviously huge detractors from instructional time.
3. Finally, a major barrier to scaling up was inability to understand the language of instruction (Portuguese). Mozambique is home to more than 40 spoken languages (Lewis, Simmons, & Fennig, 2015), and results from the oral comprehension Early Grade Reading Assessment (EGRA) measure averaged only 55% due to the students' lack of familiarity with Portuguese. Future iterations of the program will move to the incorporation of mother tongue instruction and explicit teaching of Portuguese vocabulary and language (Burchfield et al., Article 7).

Reading *Always* Depends on Oral Language Development

There are lessons to be learned from these implementations that highlight some parallels from research on reading development in western countries. In the case of Mozambique, the fact that reading is a system of written language skills that requires and is parasitic on speech and oral language development is a key concept.

Christina and Vinogradova (Article 3) report on the experience of scaling up and evaluating research-based early grade literacy programs in three countries with limited resources: Rwanda, Senegal, and the Philippines. In all three, low parental literacy, teacher absenteeism, a paucity of teaching materials, and overcrowded primary schools presented barriers. In Rwanda, the language of instruction changed from French to English in 2009, despite the fact that few teachers were fluent and literate in English. In Senegal, French is the only language of instruction although only 1% of the population speaks French as a mother tongue. In Rwanda, negotiations with local government produced a new approach in which students would first build literacy skills in their mother tongue, transitioning to English language instruction in grade 4. In the Philippines, students began instruction in one of three native languages and multilingual literacy instruction was considered a necessity; findings revealed that outcomes in Filipino were better for those children whose mother language was more similar to the language of instruction. Across sites, Christina and Vinogradova found converging

evidence supporting the importance of integrating oral language, phonics, and authentic writing for better outcomes in these multilingual and multicultural environments.

Research reports on how to facilitate the literacy learning of English language learners (ELL) in Western schools have highlighted the extent to which second language learners, just like native speakers, require explicit and systematic instruction on all the components of literacy—phonological awareness, knowledge of the alphabetic principle and decoding strategies, vocabulary knowledge, text structure and reading comprehension strategies, and writing (August & Shanahan, 2006, 2008). Learning to read fluently, becoming an expert reader, requires thousands of hours of practice (Lesgold & Welch-Ross, 2012), and the building of a complex consolidated system of linguistic skills. ELLs require explicit instruction and practice with all the components of literacy, as well as additional instructional exposure because they lack the oral proficiency in English of native speakers—the framework on which English literacy skills can be built (Francis, Lesaux, & August, 2006). August, McCardle, and Shanahan (2014) identify as additional features required: increased repetition, exposure to, and reinforcement of content; appropriate teacher scaffolding; and use of the children's first language to support teaching. Cross-linguistic transfer in learning to read is more likely to occur if the orthographies are similar and share common grain sizes (Bialystok, McBride-Chang, & Luk, 2005). LMICs like the Philippines (Christina & Vinogradova, Article 3) and Mozambique (Burchfield et al., Article 7) are already aware of the need to capitalize upon the children's strengths in their first language to facilitate literacy learning in the language of instruction.

Cultural Values, the Family, and Literacy Learning Motivation

Native speakers of the language of instruction come to school with some important building blocks of literacy learning—familiarity with the speech sounds of the language, its grammatical and morphological structures, and considerable vocabulary knowledge. Depending upon their home environments, they may also bring familiarity with print and cultural values around education and literacy. It is impossible to underestimate the contribution of these factors to reading progress in the early grades.

Dowd and colleagues (Article 2) examined the relationship between early reading program outcomes and two aspects of children's environment, home literacy, and community reading activities, in 12 sites and 424 schools in Africa and Asia. Home literacy was measured by children's reports of family reading habits and the availability of home reading materials. Community reading activities (offered through the Literacy Boost programs) included meeting a reading buddy, participating in a read-a-thon or book bank, reading camp, etc.; weekly student self-report of participation was the measure of interest. Dowd and colleagues found that home literacy

environment did relate to the children's baseline levels of reading skill and that participation in community reading activities was positively related to reading growth. Considerable variability across sites was observed, however, and the research design, although including a comparison group, did not allow any causal relationships to be reported since the community activities were part of the Literacy Boost program and seemingly not available to the control group. Finally, although a relationship with home literacy factors was suggested, this is in the context of communities within low-literacy LMICs (e.g., Ethiopia, Malawi, Rwanda, Bangladesh, and Indonesia).

The importance of parental, especially maternal, literacy attainment to children's early reading progress has been long recognized, and often considered part of a constellation of variables grouped under the umbrella construct of socioeconomic status. A remarkable intergenerational study, the Four-Country Study (1983–1998), approaches the contribution of maternal literacy in LMICs with a finer lens, directly evaluating the literacy of mothers in Mexico, Nepal, Venezuela, and Zambia and relating maternal data to child language and literacy outcomes. The findings (Levine, Levine, Schnell-Anzola, Rowe, & Dexter, 2012) revealed that maternal literacy was "a pathway from women's schooling, through maternal behavior, to declining child mortality and fertility and the precocious communicative competence of (their) children" (p. xv). School experience in childhood influenced a woman's maternal behavior in what is described as a "pedagogical" direction—an emphasis on verbal responsiveness and communicative engagement with infants and young children and tutoring of school-age children. These researchers describe the women as having internalized the role of teacher from their school experience as girls, carrying it forward into mothering and having substantial impact on their children's communicative competence and levels of language and literacy. As girls, these mothers had acquired some academic language and literacy skills even in low-quality schools. These skills enabled them to navigate and access health and educational services for their children and altered how they interacted with their young children.

The value placed on literacy learning and education is a major contributor to better reading outcomes for children, and many of these values are learned at home.

In LMICs, where parental literacy rates may be low, some programs have built into their interventions components designed to specifically foster motivation for learning to read and the placement of considerable community value on good literacy outcomes. The programs implemented in Guatemala and studied by Rubio, Rosales de Véliz, Perdomo Mosquera, and Salanic López (Article 4) featured broad-based reading promotion activities including oral book readings by community actors, storytelling by radio, distribution of print materials, and the adoption of school and classroom libraries and literacy contests. Adult literacy programs for adults

with little or no schooling in Turkey have focused on functional literacy instruction to show participants that reading is a tool useful to daily life (Durgunoğlu, Öney, & Kuşcul, 2003). Appreciating the importance of motivation for reading and the necessity for reading practice outside of literacy classes, Durgunoğlu and colleagues emphasize the interconnectedness of the functional and affective aspects of learning to read on empowering and enhancing self-confidence.

Implementation Factors Are Critically Important

Even the most promising evidence-based instructional program will fail to deliver positive outcomes if not implemented with skill and intensity by teachers who understand the program, its goals, and how to teach with fidelity. Implementation factors are critically important to improving learning outcomes. Two articles from this issue are particularly instructive in this regard. Gove, Brombacher, and Ward-Brent (Article 6) examine the factors underlying the successful scale-up of two programs designed to improve Arabic literacy outcomes in Egypt and Jordan. Despite their relative prosperity, for both, the lack of congruence between colloquial spoken Arabic and the classical Arabic used in schools (with only about 40% shared vocabulary) posed a major obstacle for teachers and children.

In response to this need, RTI International, with USAID support, partnered with ministries of education (MOE) in each country to develop, pilot, and scale up literacy interventions. In Egypt, the Early Grade Reading Program (EGRP) was iteratively developed from national assessment and pilot implementation data. It included vocabulary instruction and practice with letter-sound mappings. Following positive results from program piloting in 166 schools, EGRP was scaled up nationally and provided to more than 4 million children in the primary grades. Similar successes were observed in the Jordanian development, evaluation, and scale-up initiatives, which Gove, Brombacher, and Ward-Brent attribute to broad socialization and substantial political commitment. In fact, movement from pilot to scale occurred over relatively few years, perhaps in large part due to recognition of the importance of professional development, program training, and continued support for the grade 1 teachers, the Arabic language teachers, and their supervisors. This investment was made possible by dedicated MOE engagement, involvement, and ownership of EGRP. When partners feel ownership of new programs, the chances for successful scale-up are dramatically increased. In Egypt, there also existed a skilled implementation team led by ministry champions and young enthusiastic mentor teachers. Despite school overcrowding and other realistic constraints, the strongly committed bipartisan partnerships, a three-level cascading training model, and coherent support at all levels of the system provided a highly enabling environment for EGRP scale-up.

Gove, Korda Poole, and Piper (Article 5) reflect on the experiences gained from two USAID-funded projects designed to improve reading instruction in Liberia and Kenya, on three fronts: (a) teacher effectiveness, (b) access to and use of reading materials, and (c) classroom and school management. Although considerable evidence was available from Kenya, a relatively stable country that had enjoyed substantial past educational investment, scarce evidence existed on the situation in Liberia, one of the poorest countries, with low primary school enrollment (< 40%) and a history of extreme instability due to civil war and competition between ethnic communities.

In Kenya, the Primary Math and Reading (PRIMR) Initiative was designed to be sustainable at scale and was in some respects simpler than previous projects—with the view that simplicity and affordability would increase opportunities for sustainability. Key features included low-cost books in English and Kisawhili, clear and straightforward teacher guides, model-based teacher training, and concentrated instructional support from existing Teachers' Advisory Centres staffed by Ministry of Education, Science, and Technology (MoEST) personnel. The PRIMR Initiative, jointly designed by USAID and Kenya's MoEST, emphasized teacher training and coaching, providing premade materials to save teachers having to make them and to foster positive teacher attitudes. The teacher training was model-based and interactive and facilitated teacher engagement; mentoring and continued support were provided by MoEST staff themselves supported by PRIMR team staff. Program efficacy, training, and implementation were evaluated though a set of cluster randomized controlled trials (Piper & Zuilkowski, 2015; Piper, Zuilkowski, & Mugenda, 2014).

In Liberia, despite positive pilot results (Piper & Korda, 2010), the impact of the project was not evident in the next years at least partly due to the Ebola crisis and lack of access to instruction. Gove, Korda Poole, and Piper also note that many of Liberia's teachers remain unqualified, and the coaching role does not exist due to chronic underfunding of education. With these constraints, they argue that reading programs must be designed as vehicles to increase teachers' instructional skills; they maintain that, while initially expensive, coaching to offer frequent, well-structured support on site in schools will succeed within 2–3 years.

Designing for Scale-Up Is Particularly Complex in LMIC

Multiparty commitment, active partnership, and multidisciplinary collaboration are always important ingredients to achieving systemic changes. The obstacles of underqualified teachers, teacher and student absenteeism, overcrowded schools, and complex language demographics that rarely overlap with the language of instruction are frequent in LMICs, but perhaps the greatest problems relate to teacher preparation. Even when partnerships are successful and scale-up commitments strong, there often remain huge

needs around teacher training and support. As Christine and Vinogradova (Article 3) explain, such training takes time and resources not within the timetable and finances of most external funders. They recommend carefully calibrating the time expectations for scale-up.

In considering how teacher supports could be enhanced in LMICs, one might ask about the role of technology, remotely linking the teacher with an instructional coach to increase possible contacts. As one example, Kenya's Tusome project reports successful use of tablets to provide teachers with ongoing instructional supports (Gove, Korda Poole, & Piper, Article 5). Web-based technologies are available to connect coaches and teachers (Elish-Piper, L'Allier, Manderino, & Di Domenico, 2016). With the high prevalence of cell phone use, even in LMICs, it is easy to imagine that access to demonstration video clips on a smart phone or tablet, and Skype meetings with a coach could augment actual in-school visits and provide much-needed connection to instructional supports for struggling teachers.

Mobile technologies are being exploited by one group that is designing digital learning experiences to bring early literacy learning to remote regions of the world where children have access to neither teachers nor schools. Initiated by Nicholas Negroponte and Maryanne Wolf, this research consortium started at Tufts University and the MIT Media Lab to explore the possibility of bringing digital learning to the 72 million children with no access to schools. Initial deployments in remote regions of Ethiopia have demonstrated feasibility and produced promising initial results (Wolf, Gottwald, Galyean, Morris, & Breazeal, 2014).

The Importance of Research–Practice Synergies in Bringing Programs to Scale

In discussing current scale-up evidence in LMICs, Crouch and DeStefano comment that investment in research is needed to "leverage significant improvements in learning outcomes at a system-wide scale, and document and evaluate how specific changes in system capacity and operation lead to those improvements" (Crouch & DeStefano, 2015, p. 2). This issue provides perspective on ongoing efforts and insights into factors that contribute to success or failure in early reading programs in LMICs. Improvements in learning outcomes in some projects are to be celebrated, as is the ability to bring instructional programs and teacher training and support to scale for millions of children in some of the countries described.

Research findings have proven indispensable in developing and refining early reading programs, and research must play a major role in informing policy and partnership initiatives for the future. By adopting research-validated practices for instruction, teacher training and support, school and classroom management, system-wide incentives, and the process of bringing effective practices to scale, the development community is effecting change. We are progressing toward a more literate world for today's and

tomorrow's children. Much remains to be urgently and intelligently addressed, however, and multidisciplinary research and evaluation teams integrated into implementation and scale-up projects will bring added value to every site and undertaking.

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