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Accelerating Early Grades Reading in High Priority EFA Countries: A Desk Review

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BACKGROUND

The Dakar Goals for Education for All call for the rapid expansion of quality education for all. However, the intake of massive numbers of previously out-of-school children into a relatively fixed number of schools, staffed with a fixed number of professional teachers has overwhelmed the existing primary education systems in some high priority EFA countries. Professional teachers cannot be trained overnight; three or four classrooms cannot be added to every school next month. As a result, although EFA is getting more children into schools, in some countries less than 40% of the students are achieving minimum competencies in reading and writing by G4.[1] Many children are dropping out after three, four or even five years of primary school without learning to read.[2]

In the last 20 years, a revolution in cognitive science in industrialized countries has transformed what we know about how children learn.[3] This has enabled educators in industrialized countries to systematize and streamline approaches to early literacy, encompassing reading, writing and basic numeracy. What started out as neuroscience has been distilled into pedagogy and materials that can be used by parents and teachers alike. As the American Federation of Teachers says, "Reading IS Rocket Science"[4] but research has been able to transform that science into some reading instruction approaches that non-scientists can implement with confidence.

Reading alone does not constitute the quality education described in the Dakar goals; however, it is a necessary and, consistent with recent research, do-able component of that education. Interest is growing among education specialists in the international development community about methods to ensure that all children attending school learn to read quickly and well. Acquiring robust print literacy in primary Grades 1 or 2 (G1 or G2) ensures that children perform better in later grades and that those who do drop out are more likely to develop and use basic literacy skills later in life.

Several recent desk reviews by international donors to education highlight new findings in neurological and cognitive science that point towards promising, relatively low-cost interventions.[5] Some development projects in several less-industrialized countries are already experimenting with interventions to accelerate the process by which children establish sustainable

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[1] Nath, S. R., & Chowdhury, A. M. R. (Eds.). (2001). *A question of quality: state of primary education in Bangladesh* (Vol. II). Dhaka: Campaign for Popular Education and University Press Limited.

[2] Filmer, D., Hasan, A., & Pritchett, L. (2006). *A Millennium Development Goal: measuring real progress in education* (Working Paper No. 97). Washington, DC: Center for Global Development.

[3] National Research Council. Commission on Behavioral and Social Sciences and Education. Committee on Developments in the Science of Learning and the Committee on Learning Research and Educational Practice. (2000). *How people learn: brain, mind, experience, and school* (Expanded edition ed.). Washington, DC: National Academy Press.

[4] Moats, L. C. (1999). *Teaching reading IS rocket science: what expert teachers of reading should know and be able to do*. Washington, DC: American Federation of Teachers.

[5] Abadzi, H. (2006). *Efficient learning for the poor: insights from the frontier of cognitive neuroscience* (Operations Evaluation Division). Washington, DC: World Bank.

Charlick, J. A. (2004). *Accelerated learning for children in developing countries: joining research and practice* (Basic Education and Policy Support Activity for USAID). Washington, DC: Creative Associates International.

basic reading skills in the early grades of primary school. In preparation for further investments in this area, a survey of the actors, activities and research is in order.

PURPOSE

The purpose of the paper is to familiarize professionals in USAID and U.S.-based development organizations who are already active in education with 1) recent advances in how children learn, 2) early reading activities that build on these advances, and 3) possible next steps towards developing new or amending existing education programs to support EFA.

DATA AND SCOPE

This review covers a cross-section of expertise and professions, including but not limited to:

1. the scholarly and agency-based studies of reading acquisition in the early grades, drawing on existing literature reviews and original literature searches in the English language;
2. key international development organizations, gathering information on current strategies and projects to accelerate early grades reading in less-industrialized countries; and
3. U.S.-based professional and academic organizations that focus on state of the art practice in early grades reading, identifying potential groups who might contribute to international work.

Annex A provides a list of the English language websites of relevant academic (primarily U.S.), professional and international development organizations examined in the course of this review. The website for the Google/UNESCO Literacy Project went online as this paper was being finalized and promises to be a valuable resource for future early literacy work.[6]

This desk review does not aim to be exhaustive; rather it aims to provide vocabulary and a means of organizing the issues to facilitate further discussion on this important topic among U.S.-based professionals. The review does not encompass the rich literature on early grades reading available in languages other than English. For readers interested in more detail, Helen Abadzi reviews recent research on learning and how that research might be translated into interventions that foment better quality education in high priority EFA countries (Washington, DC: World Bank 2006).

TERMINOLOGY

The term *literacy* may be used to describe rudimentary understanding of and skills relative to many different topics: computers, the economy, the political system, music, etc. The scope of this review is restricted to the process of drawing meaning from printed materials, i.e., print literacy or *conventional reading.*[7] Reading, in this context, includes extracting meaning from written numerals and simple formulas, e.g. to recognize that four is larger than two, to know how to write them as a sum and to count to 100. Achieving fluent reading generally involves developing oral fluency and learning to write as well. *Independent reading* requires the development of strategies for understanding increasingly more complex material.

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[6] http://www.google.com/literacy/

[7] National Research Council. Commission on Behavioral and Social Sciences and Education. (1998). *Preventing reading difficulties in young children - Executive Summary*. Washington, DC: National Research Council, p 42.

In the context of this paper, early grades reading (EGR) refers to teaching and learning print literacy in the first three primary grades (G1-G3), during which time children develop/acquire the main components of *pre-literacy* and *early literacy.* In the reading research community, the latter is also referred to as *emergent literacy.* Pre-literacy components include: *oral language, phonological awareness, print awareness* and *alphabet knowledge,* which are acquired by many U.S. children through interactive reading with parents and/or pre-school, before they enter G1. Where parents are illiterate, speak a language other than the language of instruction, and/or preschool is not available, these foundations of reading must be acquired in the early grades of primary school, along with the components of early-literacy, including : *phonemic awareness, phonics, fluency, vocabulary* and *text comprehension.* Text box 1, below, provides definitions for some of these less-familiar terms.

Textbox 1
Definitions

Phonemes = the speech phonological units that make a difference in meaning, e.g. cope and rope have only one different phoneme, but it changes the meaning completely.
Phonological awareness = a general appreciation of the sounds of speech as distinct from their meaning.
Print awareness = an appreciation that speech can be represented in print.
Alphabetic knowledge = familiarity with the alphabet and with the principle that written spellings systematically represent spoken words.
Phonemic awareness = an understanding that words can be divided into a sequence of phonemes.
Phonics = instructional practices that emphasize how spellings are related to speech sounds in systematic ways.
Fluent reading = comprised of accuracy, rate (words/minute) and prosody/expression[8]

Tables 1.1 and 1.2 associate each of the foundational components of reading with illustrative *learning activities.* In addition, as shown in Table 1.3 using fluency as an example, each component (and some sub-components) can be associated with *individual performance indicators, benchmarks* for those indicators, and *instruments* that can be used to assess progress towards those benchmarks. No one indicator can comprehensively reflect all aspects of independent reading, though "words read accurately and with proper inflection per minute", an indicator for reading automaticity, has been suggested as a *leading indicator.*[9]

In recent decades, *assessment* has come to play an increasingly important role in early reading instruction. Progress on the components noted above will not proceed at the same pace for all children in a class and individual progress—or lack of it—may not be visible to the casual observer. Therefore, monitoring children's learning achievement, i.e., *individual assessment*, is an integral part of every reading lesson and should be, in effect, *continuous*. The teacher monitors progress in small increments during simple *continuous assessments*, ideally prepared to adjust the pace and content of the lesson based on the progress demonstrated—or not—in the assessments. Paper and pencil examinations are generally considered unreliable up to, and often

[8] Hudson, R. F., Lane, H. B., & Pullen, P. C. (2005). Reading fluency assessment and instruction: what, why and how. *The Reading Teacher, 58*(8), 702-714.
[9] Abadzi, H., Crouch, L., Echegaray, M., Pasco, C., & Sampe, J. (2005). Monitoring basic skills acquisition through rapid learning assessments: a case study from Peru. *Prospects, 35*(2), 137-156.

including G4.[10] Therefore, developing *performance* and *product assessments* to measure *incremental progress* in reading and writing for emergent levels of literacy is an integral part of developing reading lesson plans and interventions in the early grades.

Finally, the academic and practitioner literature on pre-school and early grades reading all endorse child- or *learner-centered* pedagogy. In its most ambitious expressions, learner-centered instruction focuses on the emotional state and motivation of the child; class-room activities may include much play, music, and discovery-oriented individual and group projects. In the context of this review, learner-centered pedagogy is relatively narrow, referring to instruction that defines as its goal learning on the part of each individual child. In a *learner-centered* classroom, every lesson begins with and constantly references individual children's existing knowledge and ends with an assessment of their progress. Ideally the reading teacher employs a range of differentiated instruction techniques adapted to the needs and interests of each of the students, in order to maximize student engagement and reading skills. The range of those techniques may vary greatly from one reading teacher to another, based on teacher education, talents and experience.

WHAT IS A READING INTERVENTION?

Most of the readers of this paper have grown up in literate families with older siblings and parents willing and able to read to them daily. For these readers, the process of learning to read may, in retrospect, may seem as natural as learning to speak or to ride a bicycle. More importantly for our purposes, these readers may not remember any particular programs or interventions—apart from *Sesame Street*--directly associated with learning phonemes or developing reading fluency. Therefore the notion that learning to read consists of more than just learning the alphabetic principle and picking up fluency through practice may seem strange.

However, in countries where EFA is a high priority, many households are illiterate and strategies and concepts of reading must be introduced to children through systematic instruction in G1-G3. In the context of this paper, reading interventions are systematic efforts to improve the teaching and learning of reading. These interventions generally involve *deliverables, delivery agents* and *delivery systems.* In the context of this review, *deliverables* are discreet interventions, such as a pupil reading out-loud five minutes per day to an older child or adult. The *delivery agent* for those five minutes could be a teacher, a parent, a community volunteer. The *delivery system* that designs the intervention and manages the delivery agents could be, for example, a school or the Girl Scouts. All reading interventions involve some deliverable that, however, simple, must have a delivery agent who is more or less embedded in a particular delivery system. Deliverables that are developed in isolation from delivery systems and delivery agents generally tend to sit on the shelf. Delivery systems and even delivery agents can expand as bureaucracies without necessarily expanding or improving the services they are designed to deliver.

In addition, reading interventions may be administered in different curricular contexts, including:

[10] "Before age 8, standardized measures are not sufficiently accurate to be used for high-stakes decisions about individual children and schools. Therefore, high-stakes assessments intended for accountability purposes should be delayed until the end of third grade (or preferably fourth grade." Shepard, L., Kagan, S. L., & Wurtz, E. (Eds.). (1998). *Principles and recommendations for early childhood assessments*. Washington, DC: National Educational Goals Panel.

- *curricular*, or fully integrated into the curriculum,
- *co-curricular*, or carried out within the school outside the formal curriculum, and/or
- *extra-curricular*, or outside the school.

Table 2 shows some reading interventions that might be administered in the three curricular contexts by delivery agents at different levels of a school system. Note that the programs shown in this table range from something a single teacher could implement on his or her own initiative to programs that would have to be approved at the school district level or higher. Several of these interventions could conceivably address one or more of the activities and skills shown in Tables 1.1 and 1.2.

The different orders of magnitude among these interventions, and the possibility of combining some interventions with others, make for difficult comparisons at the level of "reading intervention". Table 3.1 summarizes several of the descriptors relevant to comparing reading interventions and Table 3.2 illustrates how this sheet might be filled out for a specific intervention, the Break Through to Literacy Program in Ghana. The brief nature of this review does not permit the analysis of all the interventions mentioned according to these descriptors, but it is hoped these descriptors will be of use in future analytical work.

FINDINGS

> The most fundamental responsibility of schools is teaching students to read…Teaching reading is a job for an expert…Only recently has basic research allowed the community of reading scientists and educators to agree on what needs to be done…Language knowledge and language proficiency differentiate good and poor readers…
>
> *-American Federation of Teachers*[11]

> …reading is the gateway to learning in all content areas and essential for achieving high standards.
>
> *-National Education Association*[12]

Since the end of World War II, the state of reading instruction in the U.S. has been periodically characterized as in a state of crisis that demands political action. Originally bipartisan, debates about reading in the context of standards-based reform have taken on a rancorous, partisan tone; by the end of the 1990s, disagreements about reading instruction escalated into an ongoing "reading war". The most recent manifestation of the perceived crisis in reading occurred in the context of a series of system-wide, standards-based reforms beginning in the early 1990s, the most recent manifestation being the No Child Left Behind (NCLB) Act, and, within it, the Reading First (RF) initiative.[13] The controversy in reading is not about goals—all educators

[11] Moats, L. C. (1999). *Teaching reading IS rocket science: what expert teachers of reading should know and be able to do* (Occasional). Washington, DC: American Federation of Teachers.
[12] http://www.nea.org/reading/index.html, 6/7/06
[13] A brief overview of the U.S. reading war is included in Annex B. U.S. organizations and professionals currently interested in early grades reading in the context of less-industrialized countries would do well to familiarize themselves with the lines of this war and adjust their own discourse so as not to be drawn into it.

agree about the centrality of reading to the learning process—but about the strategies and interventions that can best achieve them.

Recent Research

In the last 10 years, two national, bi-partisan committees conducted exhaustive reviews of reading research and have attempted to identify strategies most likely to benefit children learning to read. The National Research Council's *Preventing Reading Difficulties in Young Children*[14] and the National Institute of Child Health and Development's report on the findings of the National Reading Panel[15] both agree that systematic instruction in phonemic awareness and phonics can help children learn alphabetic languages. Such systematic instruction does not come naturally to most teachers so it must be systematically incorporated in curricula for both teachers and students. Both studies emphasize that several teaching methods have been proven effective by research and that children need to learn word meanings and strategies for thinking effectively during reading, such as questioning and summarizing.[16]

The ongoing National Early Literacy Panel (NELP), formed in 2004, is conducting reviews of research in several areas. In 2006, the NELP released preliminary findings for a) the skills and abilities of children ages birth to five years that predict later reading outcomes and b) the interventions that are linked to later reading outcomes.[17] The results are shown in Table 4. The National Literacy Panel on Language Minority Children and Youth convened in 2004; only a summary of its findings are available at this time.

These and other studies contain several findings particularly salient to those interested in developing interventions to improve early reading instruction. For example:

1. "Reading has a large biological component and has the following prerequisites:
   - neural circuits sufficiently mature to connect sounds to letter groups and word meanings;
   - sufficient knowledge of the patterns of a language to perceive separate sounds, syllables, words;
   - sufficient working memory available to understand a message; and
   - vocabulary knowledge for comprehension, context knowledge for interpretation."[18]

2. Children do not arrive on the first day of G1 with minds blank and able to absorb whatever the teacher tells them. Even those who never attended pre-school or kindergarten bring with them many preconceptions about how the world works. The NRC report explains:

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[14] National Research Council. Commission on Behavioral and Social Sciences and Education. (1998). *op cit*

[15] National Early Literacy Panel. (2006). *Synthesizing the scientific research on development of early literacy in young children*. Retrieved 19 October 2006, 2006, from http://www.nifl.gov/partnershipforreading/family/ncfl/NELP2006Conference.pdf

[16] This cogent summary is a paraphrase of Tim Shanahan, President, International Reading Association (Personal communication, 10 October 2006)

[17] National Early Reading Panel. (2006). *Synthesizing the scientific research on development of early literacy in young children*. Retrieved 19 October 2006, 2006, from http://www.nifl.gov/partnershipforreading/family/ncfl/NELP2006Conference.pdf

[18] Abadzi, H. (2006). *Op cit*

> For example, some children have been found to hold onto their preconception of a flat earth by imagining a round earth to be shaped like a pancake (Vosniadou and Brewer, 1989). This construction of a new understanding is guided by a model of the earth that helps the child explain how people can stand or walk on its surface. Many young children have trouble giving up the notion that one-eighth is greater than one-fourth, because 8 is more than 4 (Gelman and Gallistel, 1978). If children were blank slates, telling them that the earth is round or that one-fourth is greater than one-eighth would be adequate. But since they already have ideas about the earth and about numbers, those ideas must be directly addressed in order to transform or expand them.[19]

Over time, highly qualified professional teachers develop a broad range of instructional methods to help bring these preconceptions to light. Teachers with less experience and/or less formal education, however, can and should be taught some of these methods explicitly through in-service education.

3. Schools and classrooms must be learner-centered in a specific way. Based on their psycho-motor, emotional and mental development, children are ready to learn different components of reading at different times and paces. The reading teacher therefore should be monitoring individual readiness as part of lesson planning and delivery and adapting instruction to address students' pre-existing mental models.

4. The reading curriculum should cover a set of critical competencies beyond the alphabet and print knowledge. These competencies include strategies for understanding increasingly more complex material which enable students to achieve independent reading. Some of these strategies include: identifying different types of print materials; puzzling through difficult words and phrases; and expanding vocabulary in many domains.

5. One widely cited axiom is that independent reading begins when readers are familiar with 95% of the vocabulary in the text. Both the amount of time parents spend interacting with children and the number of words parents address to children in the pre-school years has a dramatic effect on later student achievement. A two-year study of 42 families found that the number of words family members addressed to 1-3-year-old children varied dramatically by socio-economic status. Professionals, working class and welfare families addressed 45 million, 22 million and 10 million words, respectively, to their young children. Extrapolating to age 4, the estimated gap between children in professional and welfare families widened to almost 40 million words.

6. In 1998, the NRC summarized research on teaching reading to second language learners:

> …initial language instruction in a second language can be successful [however]…it carries with it a higher risk of reading problems and of lower ultimate literacy attainment than initial literacy instruction in the first language

[19] Donovan, M. S., Bransford, J. D., & Pellegrino, J. W. (Eds.). (1999). *Op cit*

> and…this risk may compound the risks associated with poverty, low levels of parental education, poor schooling, and other such factors.[20]

More recently a national study concluded that for children entering school whose first language (L1) is not the language of instruction (L2), the strongest predictor of student achievement in L2 is the amount of formal L1 schooling. The study suggested at least four and preferably 5-6 years of L1 instruction is needed to close the typical gap in academic performance between English language learners and native English speakers. The more L1 grade-level (not remedial) schooling, the higher the L2 achievement.[21] First language approaches that focus on the key components of reading (see Table 1.2) work as well for language minority students as for native English speakers and both benefit from writing. Language minority students, however, need relatively more time for building English oral proficiency and vocabulary in order to build English reading comprehension and writing skills.[22]

8. The average amount of time children need to achieve independent reading varies by language and script. Spanish and Italian may require a year or less; English and other languages with much non-phonetic spelling and scripts that do not have one-to-one correspondence between sounds and letters may take four years or more.

9. Reading programs that reach all children tend to be more expensive than those that reach only the more able, since they "may include remedial reading, bilingual education, smaller classes, longer school hours, feeding, and psychological support".[23]

These findings have not yet mobilized substantial funds to support new, more expensive reading programs in the schools that need them the most. One group of reading educators and researchers has argued that public investments should only be made in reading programs that have been tested using "rigorous" scientific methods. In most cases these methods have been reduced to randomized controlled trials (RCTs), sometimes called the "gold standard" of scientific research with respect to public policy interventions. However, few reading interventions, with the exception of some commercial curricula, have been tested using RCTs. Various factors contribute to the dearth of such trials, including the sense on the part of many education researchers that such trials are impractical for most education interventions and because RCTs are expensive.

Early Grades Reading Interventions in the U.S.

Several factors place many children at high risk of not acquiring independent reading skills during the early primary grades. These risk factors include:

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[20] National Research Council. Commission on Behavioral and Social Sciences and Education. (1998). *Op cit.*

[21] Thomas, W. P., & Collier, V. P. (2002). *A National Study of School Effectiveness for Language Minority Students' Long-Term Academic Achievement* (Final report. Executive Summary). Berkeley, CA: Center for Research on Education, Diversity & Excellence.

[22] The National Literacy Panel on Language Minority Children and Youth. (2006). Executive summary. In D. August & T. Shanahan (Eds.), *Developing literacy in second language learners: report of the National Literacy Panel on Language Minority Children and Youth*. Mahwah, NJ: Lawrence Erlbaum.

[23] Abadzi, H. (2006). *Efficient teaching for the poor: hidden insights from neurocognitive research* (Manuscript). Washington, DC: World Bank. Operations Evaluation Division.

- *parents* who have low levels of education may mean: few books in the home; few educated role models; limited vocabulary; non-standard language; few, if any, efforts to stimulate the cognitive development of young children; little appreciation of the importance of regular school attendance and homework for primary school-age children;
- *families* that are socio-economically disadvantaged with adult members working long hours and are not available to encourage students' progress or help with homework. This is particularly case where English is a second language and language issues limit parents' upward mobility;
- *pre-school and kindergarten* that are financially unavailable or academically weak;
- *teachers* who do not understand how children learn to read and are unable or unwilling to adapt instruction to individual children's learning needs; and
- *schools* that are under-funded and that do not focus on student learning.

Many reading interventions developed in the U.S. focus on children with one or more of these risk factors. For example, of the seven promising reading and English language arts programs identified by the American Federation of Teachers in 1998, most are developed for or targeted at schools with a high proportion of students who qualify as disadvantaged under Title I of the Elementary and Secondary Education Act.[24] Like students in low-income countries, a high proportion of children covered by Title I are what Hiebert calls "dependent on schooling for literacy," consequently these readings programs tend to be school-, rather than community-based.[25]

Among the interventions discussed in the U.S. literature and by U.S. professional associations, several stand out as particularly salient to current interest in EGR in relation to EFA. These include:

1. Early reading instruction in pre-school/ kindergarten

Results of pre-school and kindergarten interventions have been inconsistent. The High Scope/Educational Research Foundation followed two groups of African American students matched for socio-economic status for over 40 years. One group participated in a high quality preschool program, the other did not. Results when the graduates were 25 years old and again when they were 40 showed significant cognitive and educational advantages for the group that had participated in preschool. Researchers associated with one of the strongest and best-studied pre-school programs for disadvantaged students (e.g., The Abecedarian Program), however, suggest that, for disadvantaged children, poor primary and middle schools can undermine the advantages conferred by excellent preschools or kindergartens.[26]

The National Early Literacy Panel[27] found that stand-alone pre-school and kindergarten were particularly useful in developing school readiness. In addition, to the extent preschool and

[24] American Federation of Teachers. (1998). *Building on the best, learning from what works: seven promising reading and English language arts programs*. Washington, DC: American Federation of Teachers.
[25] Hiebert, E. (1994). Reading recovery in the U.S.: what difference does it make? *Educational Researcher, 23*(9), 15-25.
[26] Currie*, J., & Thomas, D. (1995). Does Head Start make a difference? *American Economic Review*(83), 241-364.
[27] National Early Literacy Panel. (2006). *Op cit*

kindergarten programs incorporate interventions that fall in the other four categories of effective preschool activities identified by NELP--alphabetics and making sense of print; reading to & sharing books with children; parent and home programs for improving young children's early literacy; and language enhancement—they may also address other skills and abilities that predict later reading outcomes.

The last chapter of the 2006 *Handbook of Early Literacy Research* summarizes the principles of effective and sustained benefits from targeted early education programs. Early reading interventions tend to be more successful when they are:

- provided in higher dosages (more hours, more often),
- administered earlier,
- provide direct learning experiences (rather than supervised play) and
- provide enhanced language interactions (children engaged with more-educated adults relative to their families).[28]

2. Reading educators: professionals, paraprofessionals and volunteers

All sides in the reading wars agree that reading instruction sensitive to the varied needs of early grade students requires highly qualified, professional teachers.[29] There are, however, not enough such teachers to fill the need for them in G1-G3 classrooms in the U.S. The literature discusses four strategies to address this shortage.

- *Increase reading education for professional teachers*. Almost all reports recommend increasing reading pre- and in-service reading requirements for certification of G1-G3 teachers. Such approaches tend to be among the most expensive.
- *Hire and train paraprofessionals*. Of seven promising reading programs identified by the American Federation of Teachers in 1998,[30] at least three involve the use of trained paraprofessionals. Such paraprofessionals can increase the sort of small group and one-on-one work that reading research shows is so useful to young learners, including rapid practice and feedback. However, the potential benefits of having trained paraprofessionals in the classroom may not be achieved without training professional teachers in how to make the most of them. Moreover, with the NCLB's emphasis on highly-qualified teachers and budget cuts in schools, many teaching aide positions—both trained and untrained--have been terminated.[31]
- *Recruit and minimally train tutors.* Tutors have been used to good effect, but, again, professional teachers need both training and time to supervise them.[32] Like paraprofessionals, articulate tutors can provide individual students with more verbal

[28] Ramey, S. L., & Ramey, C. T. (2006). Early educational interventions: principles of effective and sustained benefits from targeted early education programs. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (pp. 445-459). New York: Guilford.
[29] International Reading Association. (1999). *Using multiple methods of beginning reading instruction* (Position statement). Newark, DE: International Reading Association.
Moats, L. C. (1999). *Op cit*
[30] American Federation of Teachers. (1998). *Op cit*
[31] Sack, J. L. (2000, February). Lemon Aides? *Teacher Magazine, 11,* 12-13.
[32] Fitzgerald~, J. (2004). Can minimally trained college student volunteers help young, at-risk children to read better? In R. B. Ruddell & N. J. Unrau (Eds.), *Theoretical models and processes of reading* (pp. 1083-1115). Newark, DE: International Reading Association.

interaction time with someone fluent in the language of instruction as well as valuable practice and rapid feedback time.

- *Train and retain expert reading coaches.* In contrast to tutors and aides, reading coaches/mentors/specialists are usually highly qualified, experienced teachers who have taken additional course work or earned a master's degree with a specialty in reading. These coaches visit and mentor K-12 reading teachers on-site, in the classroom.[33] The role of reading coaches helps keep good teachers in the classrooms while still allowing movement up the career ladder. Reading coaches have been showcased as a "best practice" by the International Reading Association.[34]

Each of these interventions has its advantages and disadvantages. Providing more pre- or in-service education to existing professional teachers does not require restructuring of the school system and as such is attractive. Unless the school and district make changes to support the new approaches introduced by training—such as longer reading periods in G1-G3—training may have little effect on classroom practice. In addition, reading may become just one among a host of special issues that school systems attempt to address through training. Each of these trainings exerts its demands on a finite school day.

On the surface, the direct costs of paraprofessional teachers with limited pre-service training appear less that the cost of professional teachers. However, in order to be effective, paraprofessionals require more supervision and support than professionals and the administration of the school must adjust to accommodate them. On the other hand, to the extent the intervention demands deviations from conventional pedagogy, paraprofessionals may be more receptive than professional teachers who have a longer commitment to the conventional style. Tutors and reading coaches also require administrative adaptation but may represent less challenge to the system than paraprofessionals do.

3. The use of self-contained reading programs including primers, work books, teachers' guides

The emphasis in NCLB on reading programs based on "scientific research" was expected to result in a stampede to adopt the few, commercially packaged reading programs that met this criterion.[35] These packages are built around *basal readers* [or] textbooks, consisting of abridged or simplified versions of previously published and original works focusing on a limited number of words and sounds. A basal reader program may include student workbooks, teachers' guides, suggestions for practice activities and other materials.

The most valuable parts of these programs can be the teachers' guides, which provide a developmentally appropriate sequence of activities and help the teacher turn the reading of a simple text into an engaging vocabulary and decoding exercise. While some highly qualified

[33] Hall, B. (2004). Literacy coaches: an evolving role. *Carnegie Reporter, 3*(1).
[34] International Reading Association. (2006?). *The reading coach* (Best Practice Brief). Newark, Delaware: International Reading Association.
[35] More than four years after the launch of NCLB, the U.S. Department of Education website still lacks a list of reading programs that meet the "scientifically based" requirement.

teachers find these guides over scripted, the guides can, nonetheless, be helpful for less qualified teachers.[36]

4. Accelerated learning and other comprehensive school reform programs

Accelerated primary programs focus on a classroom based education designed to address the needs of the over age learner (usually over 8 or 9 years and up to 20 or 21 years of age) that never entered school or have dropped out after the first few grades of schools. The programs are designed to give students the equivalent of lower primary education within a shorten period of time usually lasting from several months to a full year. Many of these programs are also designed to support the student's entry into a formal school at the appropriate grade level of his or her age. Several examples of accelerated programs are described below.

Since its launch in 1986 in selected schools in California, the Accelerated Schools Project has implemented its school-wide approach in more than 1500 schools in several states. Accelerated Schools aim to provide all students, particularly those "at risk", with the challenging activities that have traditionally been reserved for students identified as "gifted and talented."[37] To achieve this, the program works to mobilize staff, parents, students, district office representatives, and local community members to create a consistent, challenging and supportive school environment. The program applies to all areas of the curriculum, not just reading.

Success for All (SfA) represents another school-wide approach that began about the same time as Accelerated Schools. SfA has a strong reading focus, relying on highly qualified tutors—usually certified teachers to work individually for 20 minutes per day with students experiencing difficulties in reading. This resulted in average reading performance at grade level in G1-G3 and below grade level thereafter, progressing significantly more rapidly than a control group throughout.[38] As of 2005, the Success for All Foundation was serving about 1,300 schools in 46 states, as well as assisting related projects in five other countries. Although evaluations at other sites have not been as strong or consistent, nevertheless, close to half of the measures evaluated significantly favored the SfA sites.[39]

The New American Schools (NAS) program launched in 1991 took a venture capitalist approach to identifying promising whole-school designs. The NAS encouraged the development of several different models at the pilot stage with the possibility of funding the most successful design teams to spread their models to schools across the U.S.[40] The initial hypothesis, that any school could improve its performance by adopting a whole-school design, was largely unproved. Schools needed assistance from design teams to help adapt the model to their special needs, to implement consistently and to further adapt as the need arose. The schools also required support from the district-level throughout. The researchers concluded that the conditions needed for successful

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[36] James M. Wile, personal communication, 6 October 2006.
[37] http://www.acceleratedschools.net/
[38] National Research Council. Commission on Behavioral and Social Sciences and Education. (1998). *Op cit.*
[39] National Research Council. Commission on Behavioral and Social Sciences and Education. (1998). *Op cit.*, http://www.successforall.net/about/index.htm
[40] Berends, M., Bodilly, S., & Kirby, S. N. (2002). *Looking back over a decade of whole-school reform: the experience of New American Schools*. Santa Monica: RAND. http://www.rand.org/education

implementation of whole school reform were not present in most of the schools being encouraged to adopt this type of reform through federal funding (i.e., high-poverty schools).

5. Accommodating second language learners

Until about 40 years ago, English-only, sink or swim immersion was the principle approach to second language learning in U.S. primary schools. This approach contributed to high levels of functional illiteracy and dropout among English language learners. As the economy changed in the last half of the 20th century and opportunities for upward mobility through manual labor became the exception, the need for all citizens to be literate and able to engage in lifelong learning became more pressing.[41] The Bilingual Education Act of 1968 marked a watershed in the education of language minority children.

As is the case in many areas of education, rigorous studies identifying successful programs or components of programs are difficult to design and implement and are therefore in short supply.[42] Moreover, the usual difficulty of evaluating learning outcomes is compounded by the need to produce student assessments sensitive to cultural differences and language.[43] The lack of indisputable scientific evidence leaves room for much disagreement over programs which cost more, require recruiting more and different types of teachers, and demand the restructuring of conventional primary schools.

6. Access to appropriate, engaging printed material

Reading educators of all persuasions endorse providing children with lots of appropriate, engaging material to practice reading. The basal reading programs include leveled books (i.e. books at each level that are categorized by difficulty) and other criteria, including print formatting (size; spacing), page format, language patterns and structure, predictability, genre and content of text, illustrations (and whether or not they support the text), and vocabulary and concept load.[44] Lists of leveled books are also available independent of basal readers. Such books also provide opportunities for guided reading and for students to apply specific strategies to increase comprehension.

Some educators also argue that children benefit from work with a wide range of "authentic" reading materials—such as labels on food packaging, poetry, and comic books—to encourage them to use their reading skills outside the classroom in tasks that are important to them. Guthrie

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[41] Maxwell-Jolly, J., & Gandara, P. (1997). Improving schooling for language-minority children: a research agenda. *Bilingual Research Journal, 21*(2/3), 305-323.

[42] August, D., & Hakuta, K. (Eds.). (1997). *Improving schooling for language-minority children: a research agenda*. Washington, DC: National Research Council.
National Literacy Panel on Language Minority Children and Youth. (2006). Executive summary. In D. August & T. Shanahan (Eds.), *Developing literacy in second language learners: report of the National Literacy Panel on Language Minority Children and Youth*. Mahwah, NJ: Lawrence Erlbaum.

[43] National Literacy Panel, op cit

[44] Routman*, R. (2000). *Conversations: strategies for teaching, learning, evaluating.* Portsmouth, NH: Heinemann.

emphasizes the need for reading material to be engaging in order to motivate greater volume of reading and engender increased fluency, vocabulary and, by extension, comprehension.[45]

Discussion

The IRA and other organizations specifically concerned with reading have attempted to raise awareness and funding for better reading programs by lobbying for "comprehensive principles that honor children's rights to excellent instruction", as shown in the left column of Table 5. These principles highlight several issues within early grades reading which have been mentioned above and are summarized in the right column of the table.

The literature highlights the need for increasingly professionalized teachers with significant post-baccalaureate education specific to reading instruction. In addition, to translate these specialized skills into instruction that produces higher levels of achievement in reading, particularly for disadvantaged students, teachers need a great deal of support from schools and parents. For example, teachers must have some control over class size; on the length and frequency of planning periods; on selecting the reading programs they teach; on the amount of time per day allocated to reading; on access to A/V and other equipment; on the availability of aides based on changing needs in the classroom, etc. As noted above, whole school reform, such as the Accelerated Schools Program or Success for All, offers one way to address these issues. In general, however, adequate support for teachers to undertake ambitious early grade reading programs remains an issue.

In a recent edited volume on reading instruction, the editor and 20 pre-school through third grade reading teachers summarized their definition of a balanced reading program. (See Textbox 2) To those familiar with conditions in impoverished areas of high priority EFA countries this definition of good reading instruction may seem to be out of reach. The next section, however, explores potential areas of overlap.

Early Grades Reading Interventions in Less-industrialized Countries

By the standards described at the beginning of the preceding section, all but the most affluent students in public primary schools in many less-industrialized countries are "at risk" of not acquiring fluent, independent reading skills in the early grades.

- More than 40% of the *children* under-five in the most high priority countries for EFA--those in sub-Saharan Africa and in South and West Asia--are stunted or too short for their age, a consequence of not getting enough food, of living in an unhealthy environment, and/or of insufficient health care, attention and stimulation in early childhood.[46]
- low rates of adult literacy mean that few *parents or other adults* are available to help children with homework and print material may be entirely absent in the home.
- *families* may need children to begin helping at home or earning income as soon as possible; many do not speak the official language at home or at all; education may not be valued or regarded as essential to future livelihoods;
- *pre-schools and kindergartens* may not exist or are too costly for most families;

[45] Guthrie, J. T. (2004). *Classroom Practices Promoting Engagement and Achievement in Comprehension* (PowerPoint). College Park, Maryland: University of Maryland.

[46] http://www.childinfo.org/eddb/malnutrition/database2.htm, accessed 10/26/06.

- *teachers* themselves may have received little direct instruction in reading as children; may speak the language of instruction imperfectly; may not have received much training in reading instruction at teacher training institute (if they attended one); may not have received any professional development since completing their pre-service studies; may be unaware of new research on teaching reading; may not know how to do continuous assessment and have too many students to do it if they did;
- *schools* do not have adequate resources; may have a difficult time retaining underpaid teachers; do not receive books and supplies on time; have no control over how many children they admit and how many teachers are assigned to the school; have given up on teaching most children who arrive in G1 with no school readiness.

The Millennium Development Goals aimed to address the lack of support for literacy at home by ensuring all children spend at least five or six years in school. However, in many high priority countries, many children drop out of overcrowded, unpleasant schools before G5 and many of those who do persist are still not literate when they graduate. For example, Bangladesh has achieved the 2005 intermediate MDG goal but a recent examination of 11-year-olds in Bangladesh found more than 60% of boys and 70% of girls did not demonstrate basic levels of reading.[47]

Based on her observation of primary schools in over a dozen countries in the less-industrialized world, Abadzi[48] suggests several school-based factors that prevent children from learning to read in many schools that are open to school interventions. These include:

- Limited hours of instruction, inattentiveness by the teacher, lack of training;
- Insufficient practice;
- Spelling complexity, especially when a local dialect deviates from the official language of instruction;
- Limited knowledge of the language of instruction; and
- Ambitious teaching methods, such as whole word instruction and early "text production".

Table 5 summarizes some of the interventions that Abadzi and others assert are supported by cognitive and neuro-science and capable of addressing, at least in part, some of the shortcomings above. Many of these are somewhat stand alone interventions in need of delivery agents and delivery systems, however, some probably represent feasible stop-gap measures for the poor quality of reading instruction in many rural schools while systemic reform and the professionalization of reading teachers runs its relatively slow course.

A systematic *tour-d'horizon* of all innovative EGR activities in less-industrialized countries is limited by the fact that any primary education project might conceivably include an EGR innovation. As a result, the activities described below are mainly those brought to our attention by those interested in this review or through the author's field work. These are organized below in roughly the same categories used in the previous section.

1. Early reading instruction in pre-school/kindergarten vs. primary school[49]

[47] Nath, S. R., & Chowdhury, A. M. R. (Eds.). (2001). *A question of quality: state of primary education in Bangladesh* (Vol. II). Dhaka: Campaign for Popular Education and University Press Limited.
[48] Abadzi, H. (2006). *Op cit.* Abadzi, H., Crouch, L., Echegaray, M., Pasco, C., & Sampe, J. (2005). *Op cit*

Pre-school/kindergarten programs are not widely available in most countries with low levels of adult literacy. Therefore, as noted earlier, some of the pre-literacy components shown in Table 1.1 should be included in G1 curriculum and, in some cases may be already.[50] Starting with no school-readiness to cover pre-literacy and early literacy skills in G1-G3 is difficult but necessary as pressure mounts for many children to dropout in G4.

Donor support for pre-school/kindergarten programs that can help jump-start school readiness is growing. Traditional donor-supported programs recognized the stunting effects of chronic malnutrition and disease and focused mainly on physical and verbal development. More recently, some programs have added activities to encourage pre-reading skills in preparation for primary school. However, in cases where stunting has delayed children's development by a year or more, introduction of the alphabetic principle at age 4 may not be developmentally appropriate. At least in part in recognition of their children's delayed physical development, many parents in rural Bangladesh delay enrolling them in primary school until age seven or eight. All of these dynamics increase the pressure to cover more material, more quickly in G1-G3 and increase the relevance of "accelerated" primary programs, described below.

2. Reading educators: professional teachers, paraprofessionals and tutors

The shortage of motivated professional teachers who are highly-qualified in reading instruction and willing to work in remote areas or small towns is acute throughout much of the less-industrialized world. The International Reading Association aims to work with the professional teachers who are currently available in existing schools, gradually building up materials and trainers through a series of workshops. However, many of these teachers themselves spent 12 or 14 years in classrooms with poor instruction and now work with little support for newer, research-based approaches. Under these circumstances transforming reading instruction becomes a process of years, not months. The IRA has been promoting diagnostic teaching, to help teachers focus more on what children are—or are not—learning and adjust their teaching accordingly. Similarly, USAID, through its Improving Education Quality Project, invested in several projects that promoted continuous assessment among teachers in rural Africa. Response to these trainings was generally positive but the amount of follow-up needed to establish continuous assessment as a classroom routine remains to be evaluated.

Other NGOs that focus on reaching children where there are no formal schools—e.g. BRAC in Bangladesh, Community Schools in Egypt, COPE in Afghanistan—have developed paraprofessional teacher training and supervision protocols that work with motivated adults who have completed 8-10 years of formal schooling and who currently reside in rural or remote areas. Such paraprofessionals have worked well in G1-G3 and, in some cases, up to G6. For these

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[49] See also Molteno, M., Agadhoh, K., Cain, E., & Crumpton, B. (2000). *Towards responsive schools: supporting better schooling for disadvantaged children. Case studies from Save the Children* (DfID Education Papers No. 38). London: U.K. Department for International Development. http://www.id21.org/ed.html

[50] I know of only one example here: in Bangladesh, the G1 terminal competencies in public schools are very similar to the terminal competencies in private sector kindergartens or pre-school. Children who come from pre-school into public primary schools are ready to move on to something new and may become frustrated with the slow speed of lessons are geared to those with no school-readiness.

teachers, it is particularly important to keep the number of children manageable (less than 35) and to provide clear teaching guides, regular refreshers and frequent on-site supervision and support.

In existing formal classrooms, paraprofessionals and/or tutors can help provide more one-on-one and small group interaction than a single teacher can. Pratham in India trains young women with 12 years of education to be *balsakhis* to go into the municipal schools to work with teachers and befriend students who need help catching up. *Balsakhis* meet with students after school, bring them to school on time, help with homework and try to make homework into a game.[51]

BRAC has also selected some of its strongest teachers and trained them to be master teachers, who travel to BRAC schools in their neighborhood to help less expert BRAC teachers develop and deliver better lessons at the classroom level. The effectiveness of this approach has not yet been evaluated.

3. Self-contained reading programs and increasing access to appropriate, engaging material

Unlike the U.S (see section below on STANDARDS), most countries have a single national curriculum often organized around a common set of terminal competencies for each primary school grade. National reading curricula in many countries, however, often consist of only a few books and there may be little access to leveled or authentic reading material for lower grades. Moreover, many reading curricula focus too much on word-level skills—decoding, word recognition and spelling—and fail to teach text-level skills, such as reading comprehension and writing. In these instances, reading interventions may involve developing workbooks and print materials to supplement the government curricula and expand teachers' guides and teaching aids to provide a clearly sequenced approach to teaching reading strategies and using texts to their fullest. In addition, educators may publish classic books in abridged form, children's magazines, and other engaging material and open lending libraries in schools, community centers and/or mobile units. Having a textbook for every child and sending the textbooks home with the children is another strategy to give them and their siblings more contact with print outside of school.

4. Accelerated primary programs

Accelerated learning programs described in the international development literature, relative to programs described in U.S. studies, tend to focus more on in-school activities; girls, particularly those whose primary education was delayed or interrupted; and the use of information and communication technology.[52] As an ideal, however, both attempt to incorporate:

- Learner-centered;
- Attuned to students' emotional and social needs;
- Active, problem- and project-oriented;
- Attuned to learning as a personally meaningful act;
- Driven by frequent performance-based assessment and feedback; and

[51] http://www.pratham.org/reports/gujarat.php

[52] Charlick, J. A. (2004). *Accelerated learning for children in developing countries: joining research and practice* (Basic Education and Policy Support Activity for USAID). Washington, DC: Creative Associates International.

- Collaborative learning.

Few schools in the U.S., and much less so in less-industrialized countries, have the flexibility, the expertise and the consistency in management needed to meet all of these ideals all the time. To the extent, however, that they conduct frequent performance-based assessments and provide timely feedback to teachers and management, accelerated primary programs have greater potential to improve student performance over time than programs that do not.

Because many children in less-industrialized countries start school late and/or their school career is interrupted by natural or man-made disasters, several whole-school models are designed to help children finish primary school or its equivalent in less than the usual five or six years. For example, BRAC in Bangladesh offers G1-G5 in four years for younger children and three years for older girls; the Complementary Opportunity for Primary Education (COPE) in Uganda has compressed material covered in a five-year primary education curriculum into three years of classes; and Escuela Nueva in Colombia and its many spin-offs in other countries (Escuela Unitaria in Central America and Community Schools in Egypt, for example) aims to help children advance at their own, often accelerated speed through the primary school curriculum. In these programs, the teacher spends considerable time working individually and in small groups with pre- and neo-literates, in order to advance their literacy quickly so that the students can begin working their way through a curriculum largely organized in self-directed units.

5. Accommodations for second language learners

In many less industrialized countries, the official language is not the mother tongue of many citizens. Given the prior existence of a single national curricula organized around a common set of core competencies, an important reading intervention is to develop, print and disseminate that curriculum in alternative languages. Breakthrough to Literacy (BTL) is a whole school reform approach developed by Molteno in South Africa and implemented in 39 languages in Southern and Eastern Africa and Ghana. The program prepares textbooks, workbooks, teachers' guides, and assessments in the local languages, trains and supervises teachers; and expects most children to be reading in their mother tongue by the end of G1 or G2. Another program, Breakthrough to English, designed for G2 and G3, aims to help children transition from their mother tongue to English, which is the primary language of instruction in many countries. BTL performed well but in Ghana was faulted for not fully integrating local culture into its translations and for being too rigid in its training and implementation.[53] A 2002 evaluation found students in BTL made large gains in G1 in terms of vocabulary and the enthusiasm of the children for school but had not reached goals in terms of the number of children able to write simple stories of three or four sentences in their local language by the end of G1.[54] In the context of these rural schools, while not achieving its goals, BTL was nonetheless successful. Other dual-language programs include the *Pedagogie Convergente* program[55] in Mali and BRAC's Education for Indigenous Children.[56]

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[53] Lipson, M., & Wixson, K. (2004). *Evaluation of BTL and ASTEP Programmes in Northern, Eastern and Volta Regions* (Mid-term evaluation). Accra, Ghana: USAID/Ghana & the International Reading Association.

[54] Letshabo, K. (2002). *Technical evaluation of Breakthrough to Literacy in Uganda* (UNICEF). Kampala, Uganda: UNICEF.

[55] Traore, S. (2001). *La Pedagogie Convergente: Son Experimentation au Mali et son Impact sur le Systeme Educatif* (Innodata Monograph). Paris: UNESCO International Bureau of Education.

A recent stocktaking of research on mother tongue and bilingual education in Sub-Saharan Africa concluded, consistent with the U.S. research described earlier, that

> …using African languages as media of instruction for at least six years and implementing multilingual language models in schools will not only increase considerably the social returns of investments in education, but will additionally boost the social and economic development of African nations and contribute to the improvement of the continent to knowledge creation and scientific development.[57]

The stock-taking included a cost-effectiveness analysis, which concluded that though mother tongue education (MTE) cost more to set up—up to four or five percent of a country's education budget for several years—the costs go down over time and will likely be cancelled out by decreases in repetition and dropout rates.

Discussion

Like their counterparts in the U.S., the interventions highlighted above differ on many dimensions: scope, delivery agent, setting, and type of delivery systems. Also like their U.S. counterparts, few have been subject to rigorous evaluations of their impact on student learning.

Donor support for early childhood education programs appears to be increasing. Most of these programs address at least some pre-literacy activities, increasing school readiness and reducing the need for G1-G3 to include these activities.

Interventions to strengthen reading educators abound. Developing better teachers' guides is both simpler than in the U.S., since most countries have just one curriculum, and more complicated since many countries teach one curriculum in more than one language. As in the U.S., training is always recommended, but the components needed to put it into effect--in-service support and supervision; better teaching and learning materials (such as the teachers' guides); and significant follow-up in the field—are often short-changed. To address the problem of getting teachers to live in remote areas, several whole school interventions, such as BRAC, now recruit and train adults living near the school to be paraprofessional teachers. Such paraprofessionals can make good teachers for the early grades. Several interventions involve the use of tutors and at least one has demonstrated its effectiveness with a study using randomized controlled trial. This method of evaluating interventions, as in the U.S., remains rare. In addition to providing improved teachers' guides, several interventions aim to provide more learning materials to supplement the government curriculum. These may include student workbooks, children's magazines, and leveled classic books, among others.

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[56] Sagar, T., & Poulson, N. (2003). *Education for indigenous children: the BRAC model*. Dhaka, Bangladesh: BRAC. http://www.sil.org/asia/ldc/parallel_papers/sagar_and_paulson.pdf

[57] Alidou, H., Boly, A., Brock-Utne, B., Diallo, S. Y., Heugh, K., & Wolff, H. E. (2006). *Optimizing learning and education in Africa - the language factor. A stocktaking research on mother tongue and bilingual education in Sub-Saharan Africa* (Working Document). Libreville, Gabon: ADEA 2006 Biennial Meeting.

As in the U.S., whole school interventions, such as Break Through to Literacy, are among the most attractive, however, they usually require an increase in per child expenditure. In addition, in most countries with low levels of enrollment and retention in primary schools, limited implementation capacity—the inability to supervise remote schools, for example—is a major contributor to poor reading instruction. Improving implementation often calls for restructuring the recruitment, advancement and disciplining of civil servants—a task demanding more attention and resources than most individual education projects are able to commit. Many of the whole-school interventions in less-industrialized countries, therefore, depend on non-governmental organizations, often international, to work as change agents among hard-to-reach populations.

Several interventions aim to address the needs of minority language speakers, usually by translating the government curriculum—both textbooks and teachers' guides—into minority languages and training paraprofessionals who speak the minority language to teach it. As in the U.S., there is less controversy among educators about using minority languages to teach early grades reading than there is among national policy makers.

Although all recent studies of reading intervention agree that improved student learning or achievement should be the measure of success, to date few ongoing projects have established learning benchmarks and used them to track progress. In large part this is because few countries have defined their curriculum in terms of competencies or standards and developed indicators and assessments to measure them. The next section addresses this important topic.

STANDARDS AND ASSESSMENTS

Reading standards and assessments represent a different type of intervention than those discussed to this point. Standards and assessments can be used to shape reading instruction when funders focus their support on achievement of standards, demonstrated by performance on assessment.

In the United States

Which instructional methods and interventions can help children learn to read quicker, better and cheaper? The first issue at hand is how to measure "better". As noted earlier, paper and pencil tests given before children are fully literate are usually not reliable, so most standardized achievement tests designed to assess the performance of a program or system are not administered before G4. Even then, the interpretation of these tests is difficult. For example, in 2000, in an assessment of G4 readers in 35 countries, only three countries scored significantly higher than the U.S. readers.[58] Yet in 2005, 38% of G4 students in a nationally representative survey scored below basic reading level on the National Assessment of Educational Progress (NAEP). At the state level, the percent scoring below basic reading level varied from 22% (Massachusetts) to 52% (Mississippi).[59]

These two tests reached very different interpretations of the current state of reading in the U.S. largely because they are calibrated to different standards. The international test is norm-referenced, developing a weighted mean and ranking countries with reference to that mean. In contrast, the national test is criterion-referenced; it establishes a standard independent of the

[58] http://nces.ed.gov/pubs2004/pirlspub/figures/fig3.asp?popup=true
[59] http://www.aecf.org/kidscount/sld/compare_results_pf.jsp?o=550, accessed 5/22/06

sample and measures all scores against that standard. Many educators argue that NAEP fourth grade reading standards are set too high.[60]

The results of NAEP contribute to the ongoing sense of crisis in education in the U.S. and to calls for political action. At the beginning of the 1990s there was bipartisan consensus in the U.S. education community that systemic, standards-based reform was essential to improving the quality of U.S. schools.

> The logic was that once broad agreement had been achieved on what students should know and be able to do, everything else in the system, including tests, professional development, textbooks, and so on, could be redirected towards those standards.[61]

Efforts to set national content standards in specific content areas, such as reading, however, were floundering by the middle of the 1990s, largely on political and ideological grounds. State governors who originally pushed for the content standards resisted opportunity-to-learn standards (i.e., the standardization of minimum levels of state resources per student to support those standards), claiming it opened the door to federal government policing of the details of schooling. Conservatives likewise criticized the Goals 2000 as "a dangerous step toward federal control of education."[62]

In the absence of national reading standards, some organizations, such as the International Reading Association and the National Council of Teachers of English issued broad, voluntary K-12 standards for the English Language Arts (see Annex 2, Textbox B.3). States endeavored to produce more specific standards[63] and the Council for Chief State School Officers and the National Association of Early Childhood Specialists in State Departments of Education provided guidance in the form of Early Learning Standards. The National Center on Education and the Economy "produced comprehensive standards on speaking and listening for pre-school through third grade to accompany a previously published document that only focused on reading and writing. Each topic is described in terms of real life settings with implications for instruction and applications to different cultures and linguistic settings."[64] The graded individual performance indicators provided in Table 1.3 are another way to embody standards. Finally, some standards focus on classroom and school environment and on teacher qualifications rather than on student performance. These include the Association for Childhood Education International's Global Guidelines for Early Childhood and the National Association for the Education of Young Children's Accreditation Criteria and Procedures.

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[60] Juel, C. (2006). The impact of early school experiences on initial reading. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (pp. 410-426). New York: Guilford.

[61] Wixson, K., Dutro, E., & Athan, R. G. (2003). The challenge of developing content standards. In R. E. Floden (Ed.), *Policy tools for improving education* (Vol. 27, pp. 69-107). Washington, DC: American Educational Research Association.

[62] Ibid.

[63] For an example of grade-specific student performance standards, see California's state standards for English Language Arts Contents (http://www.cde.ca.gov.be.st.ss.engkindergarten.asp, last modified 8/30/05, accessed 6/14/06)

[64] Strickland, D. S., & Riley-Ayers, S. (2006). *Early literacy: policy and practice in the early years* (Early Literacy Policy Brief). Washington, DC: National Institute for Early Education Research.

As shown in Table 6, despite the restrictions on paper and pencil tests, there is no shortage of assessment techniques and tools combining one or more of these techniques to monitor the early reading progress of English speaking students. *The Practical Guide to Reading Assessments* analyzes individual tests by reading component and includes some Spanish language tests that cover vocabulary, reading connected text, comprehensive reading and reading comprehension.[65] The National Child Care Information Center also provides a list.[66] Appropriate standards and assessments for English language learners have not been systematically developed. As shown in Table 1.3, fluent reading is one component of independent reading that is relatively easy to measure and therefore has attracted attention. Moreover multiple interventions to increase reading accuracy, speed and prosody—the components of fluent reading—are within the reach of average classroom teachers.[67]

In summary, most in the reading community agree that common standards should form the basis for evaluating student progress and program performance in reading. However, efforts to produce national standards in the U.S. have been fraught with difficulty. State standards have been more successful in some states. In addition, classroom level instruments to measure progress towards those standards are available to early grades reading teachers.

In Less-industrialized Countries

Donor-funded projects in many countries are working with ministries of education to develop primary education standards, curricula, assessment and policy, including reading.

Many international development organizations that fund primary education projects in less industrialized countries have committed themselves to measuring the quality of learning in the school systems they support. Beginning in 1996, USAID's Advancing Basic Education and Literacy project funded the development of an introduction to educational testing aimed at policymakers, administrators and classroom teachers.[68] Later, the Improving Educational Quality (IEQ) project supported the development of training materials for teachers, a teacher's manual on continuous assessment[69] and a website including at least 10 tools for early grades assessments, most of which appear to be relevant to reading.[70]

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[65] Kame'enui, E. J., Simmons, D., & Cornachione, C. (2001). *A practical guide to reading assessment: the Partnership for Family Involvement in Education.* Washington, DC: U.S. Department of Education with the International Reading Association and Health Communications, Inc. Available at www.eric.ed.gov/sitemap/html_0900000b80138659.html

[66] http://www.nccic.org

[67] Hudson, R. F., Lane, H. B., & Pullen, P. C. (2005). Reading fluency assessment and instruction: what, why and how. *The Reading Teacher, 58*(8), 702-714.

Good III, R. H., Simmons, D. C., & Kame'enui, E. J. (2001). The importance and decision-making utility of a continuum of fluency-based indicators of foundational reading skills for third-grade high stakes outcomes. *Scientific studies of reading, 5*(3), 257-288.

[68] Capper, J. (1996). *Testing to learn--learning to test: improving educational testing in developing countries*. Washington, DC: International Reading Association and Academy for Educational Development.

[69] du Plessis, J., Prouty, D., Schubert, J., Habib, M., & St. George, E. (2003). *Continuous Assessment: a practical guide for teachers* (Improving Education Quality). Washington, DC: American Institutes for Research with support from the U.S. Agency for International Development.

[70] http://www.ieq.org/Tools/topic/Students.asp

Other donors investing in classroom-level assessment include DfID and Unicef. In Malawi and Sri Lanka in 1996 and 1998, with DfID support, Johnson, Hayter and Broadfoot worked with 30 teachers in each country to develop literacy assessments for the primary grades, some of them continuous and others more formal examinations.[71] As part of an evaluation of Unicef-supported Break Through to Literacy project in Uganda, Letshabo developed language tests for English, Luganda, Dhopadhola and Alur for G1-G4 and includes them in her evaluation.[72]

To the extent that early grades reading programs are school-wide , recent work on "school report cards"[73] and "school self-assessments"[74] may help measure impact at that level. These tend to include a wide range of indicators relating to school environment and require substantial time for community deliberation, which may require an outside facilitator. In Peru, rapid tests of reading fluency, recorded and later analyzed by computer have been used to good effect with school children.[75] At the project level, Kothari has developed a 15-minute one-on-one test that appears to discriminate better at the lower end of the scale for Hindi and Gujarati for adult early literates, that might conceivably be adapted for children.[76]

Finally, in the last decade there has been increased interest in large scale assessments as a way to measure the impact of SWAps or other large investments in EFA-related programs. In Bangladesh, a coalition of national and international NGOs and donors produces the annual *Education Watch* reports, which includes the results of achievement tests by a nationally-representative sample of students.[77] Pratham, an Indian NGO, produces the *Annual Status of Education Report* (ASER), using less statistically rigorous, more participatory methods.[78] Internationally comparable tests have been developed for South and Eastern Africa[79] and in French-speaking Africa.[80] In Latin America, some countries have adapted and implemented the OECD's Programme for International Student Assessment (PISA).

Since early grades reading does not lend itself to paper and pencil tests, governments and donors interested in investing in early grades reading should be cognizant that large-scale early grades reading assessments are not an option for evaluating investments in these areas. Even at the

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[71] Johnson, D., Hayter, J., & Broadfoot, P. (2000). *The quality of learning and teaching in developing countries: assessing literacy and numeracy in Malawi and Sri Lanka* (Education Research Paper No. 41). London: Department for International Development. Education Department.

[72] Letshabo, *op cit*

[73] Educational Quality Improvement Program 2 (EQUIP2). (nd). *Report cards and accountability in decentralized education systems*. Washington, DC: U.S. Agency for International Development and the Academy for Educational Development.

[74] Educational Quality Improvement Program 2 (EQUIP2). (nd). *Strengthening accountability and participation: school self-assessment in Namibia*. Washington, DC: U.S. Agency for International Development and the Academy for Educational Development.

[75] Abadzi, H., Crouch, L., Echegaray, M., Pasco, C., & Sampe, J. (2005). Monitoring basic skills acquisition through rapid learning assessments: a case study from Peru. *Prospects, 35*(2), 137-156.

[76] Kothari, B., & Joshi, A. (2002). *Benchmarking early literacy skills: developing a tool* (EPW Commentary). Ahmedabad, India: Indian Institute of Management.

[77] http://www.campebd.org/content/download.htm

[78] http://www.pratham.org/aserrep.php

[79] http://www.sacmeq.org

[80] Programme d'Analyse des Systemes Educatifs de la CONFEMEN (PASEC). (2000). *Guide pour l'evaluation de facteurs de performance a l'ecole primaire: manuel pratique d'evaluation* (PASEC). Dakar: Conference des ministres de l'education des pays ayant le francais en partage.

fourth grade level, existing tests large-scale tend to lack sufficient discrimination at the lower end of the reading scale,[81] where EGR instruction is likely to have the most impact.

Discussion

Finding better ways to teach reading is an endeavor closely tied to developing broad consensus for graded standards of reading achievement and for common assessments. Efforts in the U.S. to create national standards for reading and language arts have run aground over the issue of unfunded mandates—a common problem in a federal system of government. Some states have had better success in setting standards and non-governmental organizations have taken the lead in creating voluntary standards. At present the federal government regularly administers the National Assessment of Educational Progress and uses that to track the rigor of reading programs at a state and school level.

Because EGR takes place at a point in children's lives before paper and pencils tests are appropriate, performance assessments must remain the main source for evaluating individual and program performance. For the purposes of program assessment, continued efforts to work to streamline these assessments and reduce the face-time necessary to implement them, may eventually make large-scale assessment more feasible.

PRELIMINARY CONCLUSIONS

Despite the latest skirmishes in the reading wars around NCLB and the stalemate over national standards, a leading historian sees an overall positive trend in reading research over the last 50 year as it has become progressively more sophisticated and more inclusive.[82] In the U.S., the persistently poor overall performance of education systems with respect to disadvantaged students led a generation of educators and researchers to narrow the focus of public programs on a few high value goals, among them independent reading. Similar concerns have motivated some international development professionals to explore the potential of similar goals. The real challenge is not in agreeing on the goals of programs such as Reading First; rather, the first task is to identify which interventions are to be emphasized and how success will be measured. The second task is to determine what types and amounts of support average teachers and average schools in disadvantaged settings need to implement those interventions effectively and how that support will be delivered in a timely way.

While there is not yet uniform agreement over which are the most important and cost-effective interventions, this review suggests there is broad agreement that new understandings of how people learn have implications for improving teaching reading in the early grades in high priority EFA countries. These include, but are not limited to:

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[81] Johnson, D. (2003). *Literacy profiles of primary school children in Bangladesh* (Effective Schools Through Enhanced Education Management (ESTEEM)). Dhaka, Bangladesh: Government of Bangladesh. Ministry of Education. Directorate of Primary Education.
Vine, K. (n.d.). *Assessing learning achievement in South Asia: observations from a theoretical perspective* (Unpublished manuscript).

[82] Alexander, P. A., & Fox, E. (2004). A historical perspective on reading research and practice. In R. B. Ruddell & N. J. Unrau (Eds.), *Theoretical models and processes of reading* (5th ed., pp. 33-68). Newark, Delaware: International Reading Association.

1. Where children have not attended pre-school or kindergarten and come from illiterate households, pre-reading skills not learned in those settings will need to be learned in the early grades of primary school. Hence strategies used to develop pre-literacy in pre-school and kindergarten in industrialized countries may need to be included, in an accelerated form, in early reading programs in the early grades where pre-primary classes are not the norm.

2. In terms of reading, few studies suggest that children can achieve fluent reading in less than one year before ages 5 or 6. The focus of reading programs for children with little support for literacy at home should probably be on G1-G3 or G4.

3. Children who do not attain a certain level of reading fluency in G1-G3 will likely relapse into illiteracy if they drop out of school in G4 or G5.

4. Simple quantitative targets, such as reading 60 wpm, are not the final goal of reading instruction, but they can serve as leading indicators of progress towards the goal of independent reading. In addition to teaching letter recognition and production, effective early grades reading curricula must cover literacy competencies, such as the pre- and early-literacy reading strategies listed in Tables 1.1 and 1.2. These competencies are what will enable students, over time, to increase their ability to comprehend and produce more complex text.

5. Good reading programs will cost more per pupil than current reading textbooks and teacher education. They may also demand more time than is currently allocated in the curriculum. However, good reading programs may be more cost effective than weak ones.

6. The quality of teaching and learning is not solely dependent on levels of resources, and increases in efficiency are possible even where funding is limited.

7. Children need some minimum level of one-on-one contact to get sufficient practice with feedback to achieve fluent reading. In many crowded classrooms, teachers do not have the time to provide this. Without literate adults and printed material in the home, paraprofessionals are practically a necessity in the classroom or on an extra-curricular basis.

8. Language and literacy go hand in hand. A child cannot read better than s/he speaks. Language skills in mother tongue must be built and literacy learned in that language before proceeding to learn reading and writing in an unknown language.

Table 1.1
Pre- Reading Goals and Learning Activities

Pre-Reading Goals	Learning Activities[83]	Assessments in English[84]
Oral language	▪ Talking with others about personally meaningful experiences ▪ Building vocabulary: describing objects, events, and relations ▪ Pretending, telling stories, resolving conflicts ▪ Having fun with language ▪ Enjoying stories, rhymes, and songs ▪ Building a rhyme and alliteration repertoire	▪ Peabody Picture Vocabulary Test
Phonological awareness	▪ Speaking and listening ▪ Attending to and experimenting with sounds that make up words ▪ Generating rhymes and alliterations ▪ Phonemic awareness—Distinguishing letter sounds	▪ The Phonological Awareness Test (PAT) ▪ Test of Phonological Awareness
Print awareness	▪ Working with print-bearing materials ▪ Handling and learning about books ▪ Being read aloud to from books ▪ Generating print ▪ Dictating stories ▪ Reading signs and symbols, storybooks, one's own writing	▪ Specific Level Assessment of Awareness of Print & Sound ▪ DIBELS – Letter Naming Fluency ▪ Letter Identification Subtest of the Woodcock Reading Mastery Test – Revised
Alphabet knowledge	▪ Seeing and handling letters ▪ Recognizing letters and words ▪ Writing in various ways ▪ Using three-dimensional letters, key boards, and moveable type ▪ Making sound-letter connections	▪ Word Reading Efficiency & Nonword efficiency ▪ The Names Test: A Quick Assessment of Decoding ▪ Word-Attack Subtest of the Woodcock Reading Master Test – Revised ▪ Diagnostic Reading Scales ▪ Reading Inventory for the Classroom ▪ DIBELS – Nonsense Word Fluency ▪ An Observation Survey of Early Literacy Achievement

[83] http://www.highscope.org/NewsandInformation/PositionPapers/mainpage.htm, accessed 5/31/06. For a longer list of possible activities/interventions, see Annex A

[84] Kame'enui, E. J., Simmons, D., & Cornachione, C. (2001). *A practical guide to reading assessment: the Partnership for Family Involvement in Education*. Washington, DC: U.S. Department of Education with the International Reading Association and Health Communications, Inc.

Table 1.2
Early Reading Components and Learning Activities

Early Reading	Learning Activities[85]	Assessments in English[86]
Phonemic awareness	▪ Identifying and creating rhymes ▪ Finding words with the same beginning, middle, and ending sounds ▪ Separating and blending syllables and phonemes	▪ Yopp-Singer Test of Phoneme Segmentation ▪ DIBELS – Phonemic Segmentation Fluency ▪ Lindamood Auditory Conceptualization Test
Phonics	▪ Sounding out regularly spelled, unfamiliar words in text and when writing ▪ Making sound-letter correspondences ▪ Working with blends, vowel combinations, silent e's ▪ Seeing letter patterns in multi-syllable words ▪ Identifying suffixes, prefixes, and root words	Spelling only: ▪ Test of Written Spelling - 3
Fluency	▪ Reading rapidly and accurately ▪ Recognizing words automatically ▪ Reading orally with inflection, phrasing, and attention to punctuation	▪ Gray Oral Reading Test – Third Edition ▪ Test of Oral Reading Fluency
Vocabulary	▪ Identifying and reading high-frequency, non-phonetic words ▪ Sorting and matching words ▪ Reading a variety of texts ▪ Making plans, carrying them out, talking and writing about them	▪ Summary Picture Vocabulary Test – III (PPVT-III)
Text comprehension	▪ Listening ▪ Predicting, asking and answering questions, retelling ▪ Relating text to experience ▪ Reading alone, in pairs, and in guided small groups ▪ Analyzing narrative texts for character, setting, problems and resolutions ▪ Comparing texts ▪ Writing ▪ Generating texts: stories, poems, journals, reports, books ▪ Drafting, rewriting, editing, proofreading, publishing & reviewing	▪ Stanford Diagnostic Reading Test – 4 (SDRT-4) ▪ Test of Reading Comprehension – 3 (TORC-3) ▪ Gates McGinite Reading Tests, Third Edition

[85] http://www.highscope.org/NewsandInformation/PositionPapers/mainpage.htm, accessed 5/31/06
[86] Kame'enui, E. J., Simmons, D., & Cornachione, C. (2001). *A practical guide to reading assessment: the Partnership for Family Involvement in Education*. Washington, DC: U.S. Department of Education with the International Reading Association and Health Communications, Inc..

Table 1.3
Reading fluency learning activities, indicators, benchmarks, assessment instruments

	Learning Activities	Indicators	Benchmarks	Assessment Instruments *Publisher*
Fluency consisting of			Words read/minute w/ accuracy & prosody	Addresses all components:
Accuracy	Repeated readings ▪ Timed ▪ With recorded models	# of errors per minute	G1 Winter 39 Spring 40-60	AIMSweb Standard Reading Assessment Packages (RAPS) *Edformation*
Rate/ Automaticity		# of words per minute	G2 Fall 53 Winter 72-78 Spring 82-94 G3 Fall 79 Winter 84-93 Spring 100-114	Dynamic Indicators of Basic Early Literacy Skills (DIBELS) *Univ of Oregon & Sopris West* Gray Oral Reading Test, Fourth Edition (GORT-4) *PRO-ED*
Prosody	Repeated reading for performance ▪ Readers' Theatre ▪ Radio reading ▪ Self-recordings ▪ Amplification Attention to phrase boundaries Echo reading Unison reading Recite nonsense sentences using punctuation as cues	Qualitative approach: checklist for prose components Quantitative approach: Zutell & Rasinski (1991)	G4 Fall 90-99 Winter 98-112 Spring 105-118 G5 Fall 105 Winter 110-118 Spring 118-128	National Assessment of Educational Progress (NAEP) Fluency Scale *NCES* Reading Fluency Monitor by Read Naturally *Read Naturally*

Hudson, R. F., Lane, H. B., & Pullen, P. C. (2005). Reading fluency assessment and instruction: what, why and how. *The Reading Teacher, 58*(8), 702-714.

Table 2
Early Grade Reading Interventions, by Delivery Agent & Setting

Setting Delivery Agents	Curricular	Co-curricular	Extra-curricular
School system policy makers	Establish [quantitative] reading standards by age and grade	Establish standards for teacher education in pedagogies for early grades reading. Adjust teacher certification processes accordingly Establish screening measures for all children in early grades for cognitive and language disabilities	Create public relations campaign to emphasize reading at home, indicators of reading progress that parents can monitor at home (e.g., *60 words/minute)*, regular attendance, basic hygiene, etc.
School Administrators/ Principals	Emphasize reading throughout the curriculum	Provide in-service education on reading instruction for all early grades teachers	Establish hiring preferences for early grade teachers who have had explicit pre-service or in-service education focused on early grades reading instruction
	Ensure all children have curricular materials on time	Add books to G1-G3 classroom libraries	Start lending libraries
	Set clear targets for reading achievement for each year. Test several times/year to gauge progress and focus additional resources as necessary Provide help for teachers with more students who are achieving below standard	Organize in-school competition to encourage children to read more books	Inform parents of targets and enlist their assistance in working towards them Organize community spelling bees
Teachers	Increase portion of school day devoted to reading instruction Design and implement continuous assessment for reading Individualize student reading programs/strategies, base on reading levels.	Assign students more reading homework Seek training in how to use parents and classroom aides more effectively	Tutor children in reading after school
Parents	Volunteer as reading aides in classrooms	Support school and classroom libraries	Read to children, Encourage children to read Support reading clubs Support community lending libraries
Paraprofessionals	Reading aides assist teacher during reading instruction	Literacy educators work with students on a rotating basis, throughout the school day	Tutors offer after school reading instruction

Setting Delivery Agents	Curricular	Co-curricular	Extra-curricular
Child care/Public health professionals	Integrate life-skills of interest to children into the reading curriculum using teacher-made materials	Provide breakfast, snack and/or lunch program containing key nutrients Visit schools to assess children's physical development Conduct annual vision tests Offer deworming programs	At point-of-service: Provide take-home books for children and guidance for parents on how to promote reading at home Check children for pre-literacy and early literacy skills

Table 3.1
Reading Intervention Summary Sheet

Country, region: Project Name (LOP, cost)

Goal/target skill:	oral language, phonological awareness, print awareness, alphabet knowledge, phonemic awareness, phonics, fluency, vocabulary, text comprehension
Activity/deliverables:	[*Description]*
Grades:	G1, G2, G3, G4
System level:	Classroom, school, decentralized govt., teacher education institutes, ministry, national
Implementer(s):	Teacher/parent/classroom aide/adolescent tutor/ECC practitioner
Supervisors:	
Delivery context:	Whole class, small group, one-on-one, individual
Curricular context:	Curricular, co-curricular, extra-curricular
Instruction method:	Lecture/discussion/written assignment/project/game/seat work
Indicator:	## wpm
Assessments:	Specific assessment instruments
Duration/Frequency:	## mins daily
Cycle:	## months
Training:	Teachers: days/year Supervisors: days/year Tutors: days/year Parents days/year
Materials:	Teacher education materials (incl. assessments) Student materials Supervisor materials (incl. assessments)
Other inputs:	
Cost/unit:	
Research base:	

Table 3.2
Illustrative Early Reading Intervention Summary Sheet

Africa, Ghana: Break Through to Literacy/Molteno (2003-04 pilot)

Goal:	Mother tongue literacy by end of G2
Activity:	**Break Through to Literacy** curriculum incorporating Language Experience Approach, combines phonics, look-say, and Whole Language, for G1. Breakthrough to English may be phased in at end of G2. Three stage approach: development & expansion of student's home language; explicit connections between students' written and oral language and its written forms (materials for making and breaking words, charts, talking walls, print-rich environments); integrated language arts throughout but most especially in stage 3, with focus on writing and reading longer texts.
Grade level:	G1
System level:	Classroom, school, district
Implementer(s):	Teacher
Supervision:	Systematic, but by whom and when?
Student context:	Whole class, ability groups, mixed ability groups, one-to-one teaching
Curricular context:	Integrated in/replaces? curriculum
Instruction method:	
Indicator:	
Assessments:	Standards and assessment protocols tied to Learner Books, but not apparently used
Duration/Frequency:	3? hours daily (entire school day)
Cycle:	12? 9? months
Training:	Teachers: two courses of five days each, [plus in-class supervision?] District-level supervisors: government or Molteno staff?
Materials:	For each student: several exercise books; 10 little readers in local dialect of increasing difficulty; For teachers, training materials, assessment standards and protocols tied to Learner Books
Other inputs:	Supervisor salaries?
Cost-sharing:	
Cost/unit:	
Research base:	London Schools Council project. Launched at Rhodes University, Grahamstown, S. Africa in 1976. Numerous evaluations (Ghana: (Lipson & Wixson, 2004), Uganda (Letshabo, 2002)), none randomized.
Findings:	Materials reflect S. African rather than local culture? Continue L1 reading work beyond G1.

Reviewer observations: BTL was funded (2003-04) but did not begin work in schools until January 2004, i.e., half way through G1. Presumably this was to allow for the materials to be prepared in the mother tongue. Evaluation took place after only six or seven months of implementation. Future projects should be timed so new materials are ready when official school year begins.

Table 4
Preliminary results of National Early Literacy Panel, 2006

	What programs and interventions contribute to or inhibit gains in children's skills & abilities that are linked to later reading outcomes? (N=191 peer-reviewed studies)				
What are the skills and abilities of young children ages birth to five years that predict later reading outcomes? (N= 300 peer-reviewed studies)	Alphabetics & making sense of print	Reading to & sharing books with children	Parent & home programs for improving young children's Literacy	Preschool & kindergarten programs	Language enhancement
Strong evidence: A - alphabet knowledge P - phonological awareness N - rapid naming tasks W - writing/writing name M - phonological short-term memory	a **P** N **W** m				P
Less consistent evidence: O - global oral language skills P - concepts about print	o p	O P	O~		O
Weak evidence: V - visual perceptual skills					
Direct reading outcomes:					
E - readiness				**E**	
R - reading	R			r	
D - decoding	d				
S – spelling	S				

KEY: B = large impact B = moderate impact b = small impact

National Early Reading Panel. (2006). *Synthesizing the scientific research on development of early literacy in young children*. Summary interim results. Retrieved 19 October 2006, 2006, from http://www.nifl.gov/partnershipforreading/family/ncfl/NELP2006Conference.pdf

Table 5
International Reading Association Principles of Excellent Instruction

Principles for excellent reading instruction[87]	Some issues these principles may address
Early reading instruction that meets individual needs	Resistance by educators and researchers to one-size fits all, highly scripted materials
Reading instruction that builds skill and the desire the read increasingly complex materials	To learn well, students need to be engaged and that may require frequent departures from pre-programmed materials
Well-prepared teachers who keep their skills up to date	A limited range of pedagogical methods should not be mandated by law; professional teachers need to customize instruction for different children
A variety of books and other reading material in their classrooms, and in school and community libraries	Access to many types of print materials, not just the material that comes boxed in commercial reading programs
Assessment that identifies strengths, as well as needs and involves students in making decisions about their own learning	Low-stakes assessment used to inform teachers and students rather than high-stakes assessments to evaluate teachers and schools
Supplemental instruction from professionals specifically prepared to teach reading	Increasing interaction between children and trained literacy educators, not untrained teachers' aides
Instruction that involves parents and communities in students' academic lives	Reading is not an activity that should be confined to the classroom
Instruction that makes meaningful use of first-language skills	Children cannot read better than they can speak; learning to read in a familiar language first improves the learning of a second language later. Vocabulary is key to increasing fluency and comprehension
Equal access to instructional technology	Teachers cannot make children ICT literate without ICT equipment. Instructional technology can help teachers tailor reading programs to specific student's needs
Classrooms that optimize learning opportunities	The quality of the classroom affects the quality of learning

[87] http://www.reading.org/resources/issues/positions_rights.html

Textbox 2
Components of a "Balanced" Reading Program

"We [the author and 20 pre-kindergarten through third grade teachers] believe that a balanced reading program should provide:
1. authentic, real literature, including nursery rhymes, fairy tales, and poems that provide students with opportunities to read and enjoy a variety of genres (fiction, nonfiction, and themes), including a rich assortment of multicultural resources;
2. a very comprehensive writing-process program that engages students in daily writing, peer editing, and publishing activities;
3. an integrated language arts and phonics skills-development approach that requires skills to be taught from the context of real literature as well as from student writing;
4. attention to the three cueing systems—semantics, syntactics, and graphophonics—to give students the required blend of skills, enabling them to read texts meaningfully and with understanding;
5. metacognitive, self-monitoring, fix-up, and scaffolding strategies to support student word recognition and reading comprehension;
6. opportunities to develop learning strategies to use in new situations and to acquire new information to develop higher order thinking skills;
7. ongoing assessment for continuous progress that engages students at the independent or instructional reading level and avoids reading materials at their frustration reading level;
8. oral storytelling, dictation, and other listening activities, including phonological and phonemic awareness development at the primary level;
9. an interdisciplinary content area reading approach, stressing the use of a wide variety of trade books as well as textbooks;
10. shared reading, guided reading, independent reading, and one-on-one instruction, particularly for struggling readers;
11. time commitment to on-task reading, writing, and related language arts activities;
12. reading/learning centers for exploration and discovery in all areas of the language arts and for managing individual and differentiated instruction;
13. opportunities for developing and maintaining a language rich environment;
14. a supportive, nurturing classroom that meets the diverse needs of students and that also promotes listening, speaking, reading, writing, and viewing as joyful experiences; and
15. promotion of ongoing family involvement in children's literacy development." (Cowen, 2006)

Table 6
Summary of Discreet EGR Interventions by Topic

Health and Nutrition	Working Memory	Biology of Reading	Increase opportunity to learn
Deworming Immunizations School feeding Micronutrients Public pump located on school premises High quality day care Year-round schools Eyeglasses	Chewing gum Emotional/humorous incidents Shorter vacations Present most important messages at beginning of day Repeat lessons over several days Recess Food containing slow-digesting glucose Encourage students to review in evening just before sleep More/better sleep Physical stress or arousal shortly after lesson	Establish quantitative goals, such as words per minute Teachers/paraprofessionals/tutors provide students rapid error correction **Devote most of G1 &G2 to math and reading** Teach more vocabulary explicitly Send textbooks home Older students read to pre-readers Literate parents read to pre-readers	Minimize school closings Reduce teacher absenteeism ▪ facilitate living arrangements ▪ supervise more closely Improve physical infrastructure ▪ prevent extreme temperatures ▪ provide more light ▪ increase square footage/student ▪ control noise Reduce student absenteeism ▪ engage parents ▪ smaller G1 & G2 class size A textbook for every child Supplementary reading materials After school programs/tutors Textbooks relevant to local life Add art and music Increase cooperative learning
Classroom Work	**Mother tongue instruction**	**Numeracy**	**Assessments**
Brief, focused chalk and talk Organize more practice, questions, feedback, discussions sequences Use pop quizzes Consider more direct instruction using scripted lessons	Introduce second language gradually: G1 = 10% all oral, G5 = 50%	Introduce numbers with spatial or concrete objects, not writing Use IRI to help weak math teachers Introduce math in the language in which it will be taught at higher levels Teach teachers more concept-related games	Rapid oral reading surveys to check quality of learning Videotape children reading and analyze later

Abadzi, H. (2006). *Efficient teaching for the poor: hidden insights from neurocognitive research* (Manuscript). Washington, DC: World Bank. Operations Evaluation Division.

Table 7
Literacy Assessment Techniques

Technique	Purpose	Comments
Observation or "kid watching"	Watch students' performance in authentic learning situations.	An essential procedure for good classroom assessment and evaluation.
Checklists	Guide observations.	May be used to guide observations in many areas related to literacy learning.
Records of independent reading and writing	Keep track of independent reading and writing.	Should be used at all levels; gives insights about students' attitudes and habits.
Retellings	Assess meaning construction.	One of the best procedures to assess construction of meaning.
Prereading plan (PREP)	Assess prior knowledge.	Helps you plan type of support students need.
Responses to literature	Assess meaning construction, levels of thinking, and use of strategies.	Shows how students use what they have read and integrate ideas into their own experiences.
Student self-evaluations	Determine students' perceptions of their own reading and writing.	Helps students take ownership of learning.
Process interviews	Gain insight into students' metacognition processes.	Individual procedure that should be used selectively.
Teacher-selected reading samples	Assess meaning construction. Assess decoding, if done orally.	Informal procedure; may be collected and compared over time.
Literature circles	Assess meaning construction.	Integrates instruction and assessment
Interest inventories	Determine students' interests.	Provides a basis for planning learning activities.
Scoring writing using rubrics	Evaluate meaning construction through writing.	Provides a way of judging writing by looking at the entire piece.
Miscue analysis	Assess decoding and use of strategies.	Procedure requires detailed training.
Informal reading inventories	Assess meaning construction and decoding.	Procedure requires detailed training. Use judiciously.
Running records	Assess use of decoding strategies.	Procedure requires detailed training.
Performance assessments	Assess application of all strategies, skills, and knowledge.	Makes assessment an integral part of instruction.
Assessment procedures accompanying published materials	Varies according to publisher.	Should be used selectively.

Note: From Literacy: Helping Children Construct Meaning *(3rd ed., p. 559), by J. D. Cooper, 1997, Boston: Houghton Mifflin Company. Copyright © 1997 by Houghton Mifflin Company. Used with permission.* http://www.ncrel.org/sdrs/areas/issues/content/cntareas/reading/li7lk29.htm, accessed 6/15/06

ANNEX A: ORGANIZATIONS THAT MIGHT PRODUCE STUDIES OR IMPLEMENT PROJECTS ADDRESSING EARLY GRADES READING

Intergovernmental organizations with some focus on ECE

UNESCO	The Literacy Project (with Google)
UNICEF	
IEA	High/Scope: cross-national survey of early childhood education
IIEP	International Institute for Education Planning
World Bank	
ECDVU	Early Childhood Development Virtual University

International organizations with focus on reading and/or ECE

…based in industrialized countries

AKF	Aga Khan Foundation
AKU	Aga Khan University
ACEI	Association for Childhood Education, International
CGECCD*	Consultative Group on Early Childhood Care and Development
EERA	European Early Childhood Reading Association
ILI	International Literacy Institute
IRA	International Reading Association
OMEP	Organization for Early Childhood Education (Intern'l & U.S. chapter)

…based in less industrialized countries

Ravi J. Matthai Centre for Educational Innovation (SLS)
Indian Institute of Management, Ahmedabad
The Molteno Project, South Africa
Pratham, India
BRAC, Bangladesh

Internationally-oriented organizations, U.S.-based with work in ECE

AED	Academy for Educational Development
AIR	American Institutes for Research
Banyan Tree	
CARE	CARE-US and International
EDC	Educational Development Center
PLAN	PLAN International
SC-US	Save the Children – U.S.
	(*Strong Beginnings; Reading for Children)*
SIL	Summer Institute of Linguistics/Ethnologue
	World Education
	World Learning
	World Vision
USAID	U.S. Agency for International Development

Domestically-oriented ECE organizations based in U.S.

Check for each state name

Education research organizations in other countries

ACER	Australian Council for Education Research
FER	Foundation for Educational Research (UK)

Domestically-oriented organizations, U.S.-based, focused on ECE and/or reading

AERA SIG on Critical Perspectives in Early Childhood Education
AERA SIG? on Reconceptualizing Early Childhood Education (or just a meeting?)

CREC*	Clearinghouse on Reading, English, and Communication, Indiana U.
CIERA	Center for the Improvement of Early Reading Achievement (website only)
ECEA	Early Childhood Education Assessment Consortium, CCSSO
ECPC*	Early Childhood and Parenting Collaborative. Univ of Illinois
FCRR	Florida Center for Reading Research
High/Scope	High/Scope Early Childhood Reading Institute
FCELL	Foundation for Comprehensive Early Literacy Learning, Redlands
Literacy Web	Neag School of Education, University of Connecticut
NAEYC*	National Association for the Education of Young Children
NCFL	National Center for Family Literacy – family-oriented instructional materials
NHL	New Horizons for Learning http://www.newhorizons.org
NIEER*	National Institute for Early Education Research, Rutgers University http://nieer.org/
NLI	National Literacy Institute
NRC	National Research Council, Early Reading Committees (defunct?)
NRP	National Reading Panel (defunct?)
RAND	RAND Reading Study Group (defunct?)

U.S. Department of Education.
Early Reading First grants.
North Central Regional Education Laboratory
South Eastern Regional Education Laboratory

U.S. Department of Health & Human Services

NCCIC	National Child Care Information Center, Child Care Bureau
NICHD*	National Institute for Child Health and Human Development. NIH
NIECED	National Institute on Early Childhood Education & Development http://www.ed.gov/offices/OERI/ECI/index.html

International, focused on ECD/ECE but no early grade reading

Bernard van Leer Foundation [no literacy focus]
Organization for Economic Cooperation and Development. [nothing direct about reading]
Center for Education Research (CERI), Literacy & Numeracy Network
Directorate for Education. Brain and Learning Working Group

ANNEX B: THE RELEVANCE OF THE U.S. READING WAR TO INTERNATIONAL EFFORTS TO PROMOTE EARLY GRADES READING

There are several reasons why international development organizations interested in early grades reading interventions need to be familiar with the "reading wars".

- First, most U.S. experts who will be asked to advise international development agencies and participate in early grades reading programs will be partisans in this war. Attempting to understand the concerns of each side, where individual experts stand and which factions are unable to reconcile their differences can save significant time in assembling expert teams and meetings.
- Second, many of the issues that propelled interest in reading in the U.S. in the early 1990s and escalated into the reading wars, are propelling interest in reading in the international development community now. The community should be prepared to address the rancor this will likely attract.
- Third, randomized control trials (RCTs) and other quantitative research methods commonly used to compare the relative efficacy of public health interventions are not the most common methodologies in reading research. Advocates of these methods argue that RCTs are the gold standard of public policy research and no intervention is fully vetted without them. Opponents point out that emphasizing RCTs as the only "gold standard, scientific" research method, devalues two centuries of systematic education studies that mainly use other methods.[88]
- Finally, recent discourse about early grades reading within the international development community uses terminology usually associated with one particular side of the reading wars.

For example, Helen Abadzi[89] provides the most comprehensive review of research in cognitive science in the industrialized world and its potential for improving learning in the less-industrialized world. Based on recent research on working memory, she concludes that the halting reading rates that she and other World Bank evaluators are finding in upper primary schools in less industrialized countries likely indicate low levels of comprehension. She extrapolates that many of the children who are now dropping out in G4-G6 are likely to lose whatever literacy skills they have acquired to that point and will lapse into illiteracy. She argues that the reader must link together and hold a certain number of words within a certain number of seconds in order to comprehend what is read. In Spanish, this is about 60 words per minute.

Seymour, et al (2003) and Ziegler and Goswami (2005)[90] argue that this level of fluency can be achieved within 1-2 years for children studying Spanish or Italian, languages with a one-to-one correlation between phonemes and letters of the alphabet, rendering it relatively easy to learn. More time is needed—but still less than five years—to achieve reading fluency in languages with scripts in which one letter may represent more than one phoneme (French and English); in which vowels are implied, not written (some languages written in Arabic); or in which there are many archaic and conjunct letters (such as Bengali). She suggests teachers in the less-industrialized should devote a much larger proportion of G1 and G2 to reading instruction; that more direct instruction needs to be focused on the core reading skills (see Table 1) and that relatively more attention needs to be given to reading fluency. Several authors argue that this focus on reading fluency, rather than reading comprehension, is justified because fluency is a necessary contributor to comprehension.[91]

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[88] For more on this topic see National Research Council. (2002). *Scientific research in education* (Committee on Scientific Principles for Education Research). Washington, DC: National Academy Press..

[89] Abadzi, H. (2006). *Efficient teaching for the poor: hidden insights from neurocognitive research* (Manuscript). Washington, DC: World Bank. Operations Evaluation Division.

[90] Seymour, P., Mikko Aro, H. K., & Erskine, J. M. (2003). Foundation literacy acquisition in European orthographies. *British Journal of Psychology, 94*(2), 143-174. Ziegler, J. C., & Goswami, U. (2005). Reading acquisition, development dyslexia, and skilled reading across languages: a psycholinguistic grain size theory. *Psychological Bulletin, 131*, 3-29.

[91] Seymour, et al (2003) and Ziegler, J. C., & Goswami, U. (2005). Reading acquisition, development dyslexia, and skilled reading across languages: a psycholinguistic grain size theory. *Psychological Bulletin, 131*, 3-29.

Several features of these arguments, however, are commonly associated with the more conservative, back-to-basics approach to reading that fueled one side of the reading wars. For example,

- the precedence given to reading fluency over comprehension;
- the appeal for more direct instruction—where the teacher attempts to convey information as such to students—and her skepticism with respect to constructivist and discovery approaches to pedagogy, particularly in schools serving disadvantaged populations; and
- the emphasis on measurable indicators of brain activity and quantitative research as reasonable basis for generalizing conclusions drawn in industrialized countries can be generalized to vastly different contexts.

The reading wars are sometimes traced to a *systemic, standards-based reform* movement in U.S. education that began in the 1980s. The idea driving these reforms was that all children should have an excellent education and that standards for that education should be set at the state or even national level and that schools should be held accountable to those standards. The movement, which began as a bipartisan effort, split largely over two ideas. First, one side argued that standards could not be divorced from a modicum of resources necessary to create the opportunity to meet those standards. Second, that dictating the curricular and pedagogical means by which all children would learn was counter to the accumulated wisdom of the teaching community, which is committed to individualize instruction to maximize learning. In political terms reading became a struggle between populists and experts, with politicians claiming that "scientific research" could be appropriated and interpreted by the populace without further reference to the researchers and educators who produced that research.

Textbox B.1 lists the major national reports on reading instruction in the last two decades in the U.S.. Many were supported through funding from the National Institute of Child Health and Development at the National Institutes of Health. This signals a trend to address reading as a child development and health issue, rather than an educational issue.

Efforts to develop standards for early reading began as a national bipartisan effort as the Standards Project for the English Language Arts (SPELA). SPELA was implemented by two groups that had traditionally covered different domains: the International Reading Association covered early grades reading and adult education and the National Council of English Teachers covered English literature and writing for upper primary through high school. Their first attempt to create broad standards covering primary through upper secondary, which individual states and districts were expected to tailor to their needs of grades and constituencies, was a disappointment to those who wanted to use the standards to measure progress on specific indicators and "to hold schools accountable". The federal government discontinued funds for the project in 1994, but the IRA and NCET continued work. In March 1996 issued their final draft, shown in Textbox B.2.

Textbox B.1
Major reports on reading, 1983-2003

Coleman Commission	1983	*A Nation at Risk*
Commission on Reading	1985:	Anderson, et al *Becoming a Nation of Readers*
Standards Project for the English Language Arts	1992	NCET, IRA, Center for the Study of Reading Federally funded, draft standards K-12, 1994 Federal funding discontinued in 1994
International Reading Assoc & National Council of English Teachers*	1996	*Standards for the English Language Arts* Published independent of federal government
National Research Council	1996	*Preventing Reading Difficulties in Young Children*, 1998
The Reading Excellence Act	1997	DecHR 2614 passed the House
National Reading Panel 1998		*Teaching Children to Read*, 2000, NICHD-funded follow on to NRC 1998, chartered by Congress
Council for Basic Education	1998	Published illustrative standards for ELA
Rand Reading Study Group	1999	*Reading for Understanding*, 2002 OERI-funded
ACHIEVE	2000	Published illustrative ELA standards for states
No Child Left Behind	2002	Includes Reading First initiative
National Early Literacy Panel	2006	Executive summary only available at this time

Source: Wixson, K., Dutro, E., & Athan, R. G. (2003). The challenge of developing content standards. In R. E. Floden (Ed.), *Policy tools for improving education* (Vol. 27, pp. 69-107). Washington, DC: American Educational Research Association.

Textbox B.2
Standards for the English Language Arts
International Reading Association & National Council of English Teachers, 1998
http://www.reading.org/resources/issues/reports/learning_standards.html

Purpose: to provide guidance in ensuring that all students are proficient language users so they may succeed in school, participate in society, find rewarding work, appreciate and contribute to our culture, and pursue their own goals and interests throughout their lives. Although we present these standards here as a list, it is important to note that they are interrelated and should be considered as a whole.

1. Students read a wide range of print and nonprint texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works.
2. Students read a wide range of literature from many periods in many genres to build an understanding of the many dimensions (e.g., philosophical, ethical, aesthetic) of human experience.
3. Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, graphics).
4. Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.
5. Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.
6. Students apply knowledge of language structure, language conventions (e.g., spelling and punctuation), media techniques, figurative language, and genre to create, critique, and discuss print and nonprint texts.
7. Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources (e.g., print and nonprint texts, artifacts, people) to communicate their discoveries in ways that suit their purpose and audience.
8. Students use a variety of technological and information resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge.
9. Students develop an understanding of and respect for diversity in language use, patterns, and dialects across cultures, ethnic groups, geographic regions, and social roles.
10. Students whose first language is not English make use of their first language to develop competency in the English language arts and to develop understanding of content across the curriculum.