SUCCESS

in first grade

AED
Global Education Center

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ABOUT AED

The Academy for Educational Development (AED) is a nonprofit organization working globally to improve education, health, social and economic development--the foundation of thriving societies.

In collaboration with local and national partners, AED fosters sustainable results through practical, comprehensive approaches to social and economic challenges. AED implements more than 300 programs serving people in all 50 U.S. states and more than 150 countries.

Our Vision
AED envisions a world in which all individuals have the opportunity to reach their full potential and contribute to the well-being of their family, community, country, and world.

Our Mission
AED's mission is to make a positive difference in people's lives by working in partnership to create and implement innovative solutions to critical social and economic problems.

About the AED Global Education Center
The AED Global Education Center (GEC) strives to improve basic education systems in ways that are sustainable so that every child in grades K-12 has access to education of high quality. GEC works with communities and governments to develop programs that reach children no matter how remote or poor the location, building off of our previous experience and adding innovative approaches to address new challenges.

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FOREWORD

For nearly 20 years, since the 1990 Jomtien Conference, we have been working to expand access to achieve Education for All. As more and more children enroll in school, our concern has increasingly turned to the quality of their education. Our sights are now set on Quality Education for All. This shift in focus from inputs to quality outcomes demands new ways of thinking about how to provide strategic support for education.

New ideas, new strategies, and new tools are being developed and are helping to change teaching and learning across the globe. While no single set of strategies or tools guarantees quality education outcomes, especially in resource-poor environments, much is being done to improve our understanding of the critical elements to raising education quality in the context of the unique conditions in each country or community.

Success in First Grade, the first in AED's new series examining quality education for all, looks at four principles drawn from experience and research that we believe form the foundation for successful learning and healthy sustainable learning communities. These principles are:

- Maximize Opportunities to Learn
- Build Multiple Support Structures
- Create Learning Communities
- Integrate Education with Other Child-Oriented Systems

Each section of this publication introduces and examines one principle and provides pertinent examples of stories from the field, excerpts from technical reports, photographs, and other evidence to illustrate how the principle applies to real-world contexts.

We recognize that there is room for disagreement or elaboration regarding the principles we put forward here. We offer this publication as a starting place for discussion. We hope it will stimulate debate, and we at AED welcome the opportunity to engage with everyone interested in quality education as we continue our essential shared mission: to help support teachers and learners, families, and communities around the world.

Patrick Fine
Senior Vice President and Director
AED Global Education Center

CONTENTS

WHY FIRST GRADE
matters

Nowhere is quality more important than in the design and delivery of education in the first grade. The experiences a nation designs for its most vulnerable children can determine whether they will continue on their path through public education or fall by the wayside. With such high stakes involved, it would seem unwise to leave the outcome to chance.

For many children enrolling under the *Education for All* (EFA) initiative, first grade is their entry into formal education. Of course, these children will have been learning actively from birth, developing language and reasoning skills, and acquiring all manner of valuable concepts about their families and the communities in which they live. But it is in first grade where children encounter formal education.

For the first time, children's learning is managed by a teacher, their thinking evaluated by that teacher, and their development measured against benchmarks. These interactions invariably shape their self-concept and their concept of school. They confront in school a most serious game with a complex set of rules and seemingly random goals. But what may be most disconcerting from a child's perspective is that little of what he or she has learned before entering first grade will be useful in navigating this new terrain.

Children in the first grade are expected to aquire essential skills in literacy and numeracy by the end of the year, skills that will enable them to go on to the second grade.

These first grade experiences make up the foundation of formal education. Children in the first grade are expected to acquire essential skills in literacy and numeracy by the end of the year, skills that will enable them to go on to the second grade. Acquiring these academic skills during first grade is challenging for many children, and, for a variety of reasons, many fail.

Literacy and numeracy skills are certainly prerequisites for success in the upper grades. But the formula for school success contains other equally important ingredients.

Success in formal education requires affective, social, physical, and procedural development. Children are required to learn the fundamentals of reading, writing, science, and math, but they should also find these pursuits personally meaningful, if not enjoyable.

They should learn the skills and conventions that people use to articulate their ideas and feelings to one another while engaged in these learning activities. And even children in the first grade are expected to begin acquiring the strategic reasoning processes and habits that make independent, lifelong learning possible.

Children entering first grade need to grasp what school is about. Girls and boys who have never been a part of a formal education system must develop positive attitudes about school, about the value of school learning, and about their own value as learners. They should come to see themselves as members of the school community where people of their gender, their ethnicity, and their language are respected.

Children in first grade often discover new rules and roles, some of which may conflict with important ideas and values they have formed at home. For a very young child, ascertaining the purpose of school, sorting out cultural conflicts, and negotiating new relationships with adults and other children, all while developing various abstract academic competencies, seems a formidable challenge. But that child's chances of surviving in school depend on the ability to do so.

Fortunately, children do not have to go through first grade unaided. There are instructional techniques, learning materials, policies, and a variety of adults to help them acquire the necessary cognitive, affective, physical, and social skills. Unfortunately, there is no single "magic bullet" that can be used with all children and with equal success. The same instructional technique or textbook that works for one child may not work for another—even if both are sitting in the same classroom. Why?

Individual children vary greatly in background knowledge, physical attributes, cognitive abilities, and dispositions. Children mature at different rates and in different ways. And these individual differences are usually most extreme in first grade, where children have yet to become shaped or evaluated by their school experiences.

repetition IN GRADE ONE

In the majority of countries, particularly those in the developing world, the highest repetition rates are usually found in grade one. For example, in Nepal 43% of pupils repeat this grade, compared with 11% for grade 5. Grade one repetition rates close to 30% or more are also found in Brazil, Guatemala, the Lao People's Democratic Republic, and several countries in sub-Saharan Africa. The incidence of grade repetition partly reflects the quality of primary education, yet the high repetition rates for grade one in many countries also raise the issues of school transition and readiness.

In Latin America and the Caribbean, despite the overall high level of access and participation in primary education, school completion remains an important challenge, with survival rates less than 83% in the majority of countries. In some countries of this region, including the Dominican Republic, Guyana, and Nicaragua, less than 60% of the children who enter primary school go on to reach the last grade.

From UNESCO, 2007, *Global Monitoring Report*

Constructing a comprehensive foundation in the first grade is essential for school success. Children and their parents must be central and active participants in that endeavor. But it is the responsibility of the education professionals directly and indirectly involved in designing and managing the education process—policymakers, teachers, administrators, and others—to ensure this construction project does not fail. They need to give careful consideration to the structure being designed and how that design can be used to support successful outcomes. Achieving success in first grade requires an effective framework that supports children and parents, teachers, and communities.

This publication illustrates one such framework, which is neither radical nor revolutionary. Indeed, many elements and interventions associated with it, and highlighted on the following pages, are well-known and proven practices. However, it is useful to reflect on how a simple framework can re-shape the way we look at problems. A framework can also inform how we pursue solutions that make the chances of success for each child not only possible, but inevitable.

Before elaborating on a framework for building success in first grade, it is useful to consider some of the unprecedented challenges confronting education planners in the developing world.

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THE *education* LANDSCAPE

Education in the developing world is entering a new era of transformation. In the last decade, national policies that eliminated school fees opened schoolhouse doors to millions of previously underserved children, adolescents, and their families. Now it is incumbent upon educators to demonstrate to these new learners—and to the global community—their ability to provide education that embodies high standards of quality, and that quality education, in turn, leads to outcomes that have real value to individuals, families, and communities. The challenges inherent in achieving these important goals are both qualitative and quantitative in nature.

EFA and similar initiatives created disequilibrium between education demand and systemic capacity.

In some countries, average pupil-teacher ratios are now at dysfunctional levels. Overenrolled classrooms strain the education workforce and school capacity, and there are not enough qualified teachers to match demand. Governments have limited resources to recruit, educate, and retain talented and motivated people. In addition, there are often insufficient supplies of textbooks and instructional materials; shortages of classrooms, furniture, and equipment; and a lack of competent school administrators.

In some places inadequate school capacity has led to double and triple shifts, practices that erode the amount of time first grade children spend in school each day and accelerate the deterioration of existing buildings and equipment. These factors confound the ability to ensure successful quality learning outcomes.

More teachers, more classrooms, more textbooks are essential for ensuring quality education results. And yet, even this quantitative challenge is not straightforward. Education planners often lack the capacity and the information systems to manage effectively the financial, human, and physical

resources they do have. One country's urban first grade classrooms may be overenrolled, while its first grade classrooms in schools in remote and rural communities may be underused or multiage. Instructional materials may be distributed unequally, inappropriately, or not at all. And the teaching workforce is seldom deployed to place the most effective first grade teachers in the most challenging first grade classrooms.

There are qualitative challenges, too. EFA dramatically altered the education landscape in the countries of Africa, Asia, and the Americas. When the schoolhouse doors opened, millions of children entered the system from the margins. These children were qualitatively different. Many pupils and their families were new to formal education. These children were more likely to be female; to speak a home language that is not the mainstream language; to come from poor and illiterate homes; and to have some level of physical, emotional, or cognitive disability. And once they took their seats inside the schoolroom, these first grade children were more likely to encounter traditional education policies, teachers, and textbooks that were never designed to accommodate their diversity.

EFA expanded national education systems into new contexts as well. Governments are providing services in places that have previously gone underserved—rural areas, urban slums, internal displacement camps, post-conflict environments, and transient communities. Each new context adds another layer of logistical, managerial, and political complexity and requires education systems that are qualitatively more flexible to conform to local contours and diverse needs.

Amid all this, education systems are undergoing a substantive transformation of their core mission. Centrally organized systems essentially designed to ensure that pupils acquire standard sets of facts are giving way to decentralized service providers whose new mission is to produce an inclusive, socially cohesive national population of multilingual critical thinkers, entrepreneurs, and professionals prepared to participate in the knowledge economy.

PUPIL/TEACHER *ratios*

The pupil/teacher ratio (PTR) measures the number of teachers in relation to the size of the pupil population, so it has implications for quality. Generally, ratios above about 40:1 make it difficult for teachers to maintain adequate quality standards. In 2004, the ratio was below 40:1 in 84% of the 174 countries with data available.

Most of the 28 countries with ratios exceeding 40:1 were in sub-Saharan Africa, although a few were in East Asia and the Pacific and South and West Asia. Among the regions, sub-Saharan Africa had the highest median PTR (44:1), and country variations within that region were particularly striking: the Congo, Ethiopia, and Malawi, for example, had ratios of 70:1 or above, while Seychelles had a ratio of 14:1. Chad, Mozambique, Afghanistan, and Rwanda also had high ratios of between 62:1 and 69:1. Such high ratios impede learning.

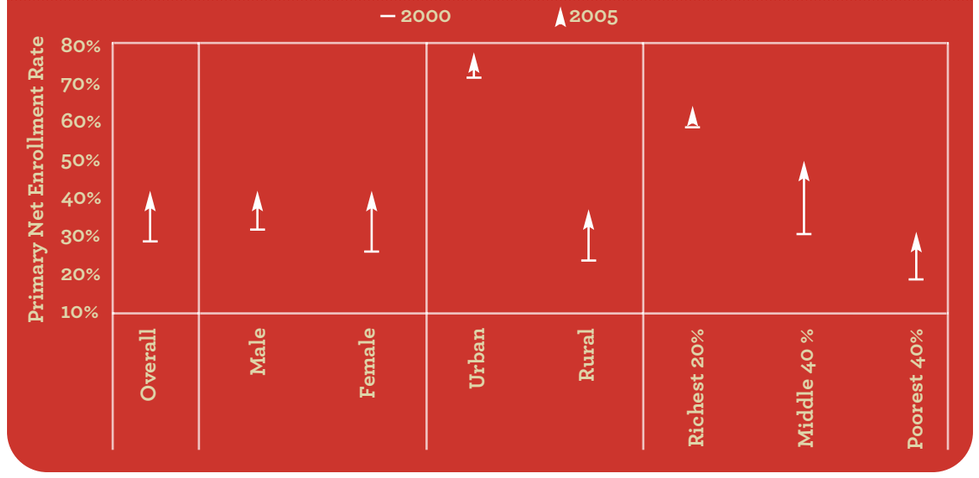
From UNESCO, 2007, *Global Monitoring Report*

GROWING UP *poor*

- Almost half the world's countries have no formal programs for children under age 3.
- A child born in the developing world has a four in 10 chance of living in extreme poverty, defined as living on less than US$1 a day.
- An estimated 10.5 million children died in 2005 before they reached age 5, most from preventable diseases and in countries that have experienced major armed conflict since 1999.
- AIDS has orphaned more than 15 million children under age 18, 80% of them in sub-Saharan Africa.
- The rights of millions of children are violated by trafficking, labor, abuse, and neglect.
- Many of the 50 million children whose births are not registered each year are unable to access basic services or schooling as a result.

From UNICEF, 2005, *State of the World's Children*

When Ethiopia increased the NUMBER OF CHILDREN ENTERING SCHOOL, the benefit was greatest among previously underenrolled groups.



From Demographic and Health Survey Datasets, 2000 & 2005, calculated by the Education Policy and Data Center

school resources IN SUB-SAHARAN AFRICA

A survey conducted by the Southern Africa Consortium for Monitoring Educational Quality revealed the following descriptive categories. These were determined to be highly correlated with pupil learning.

LEVEL 1

Insufficient School Resources
Buildings require repairs. School has playground and open-air classes. There is a writing board and chalk. Pupils share sitting places and textbooks. Pupils have exercise books, ballpoint pens, and pencils.

LEVEL 2

Limited School Resources
All of the above and school is 5 km from clinic and market and has sports ground, and nonpiped water. Classroom is temporary structure. School head has an office. Teachers have chairs, tables, and access to English dictionary. Pupils have rulers.

LEVEL 3

Basic School Resources
All of the above and school has fence, store room, and staff room. Water is piped. Fewer than 60 pupils use the toilet. Classrooms have wall charts. Teachers have English dictionaries, atlases, and access to maps and guides. Pupils have notebooks and erasers.

LEVEL 4

Comfortable School Resources
All of the above and school has electricity, library, first aid kit, radio, telephone, and typewriter. Classrooms have cupboards. Teachers have world maps, maps of Africa, and access to geometric instruments. Pupils have textbooks and sharpeners. School purchases books annually. Books can be borrowed.

LEVEL 5

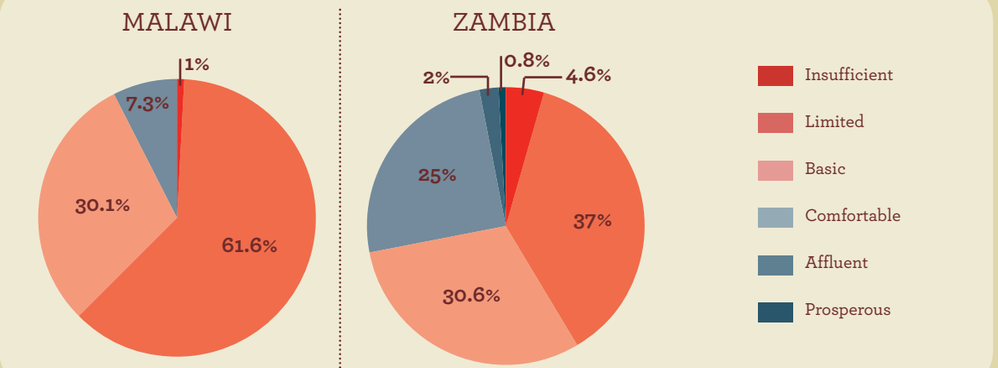
Affluent School Resources
All of the above and school is located within 5 km of library and bookshop. Classrooms have water taps and bookshelves. School has duplicator and tape recorder. At least one book per pupil for class and school libraries. Pupils have file folders.

LEVEL 6

Prosperous School Resources
All of the above and school has secretary's office, assembly hall, and cafeteria. Buildings are in good condition. Teaching space is at least 2sqm/pupil. School has TV, VCR, photocopier, computer, overhead projector, fax machine, and film projector.

DISTRIBUTION ACROSS SCHOOL RESOURCE LEVELS

COUNTRY	LEVEL 1 Insufficient	LEVEL 2 Limited	LEVEL 3 Basic	LEVEL 4 Comfortable	LEVEL 5 Affluent	LEVEL 6 Prosperous
	% of Schools within Each Country					
Botswana	0.0	1.3	6.8	68.4	19.8	3.8
Kenya	0.0	11.4	41.7	38.6	6.5	1.9
Lesotho	0.0	9.2	49.0	40.5	1.3	0.0
Malawi	1.0	61.6	30.1	7.3	0.0	0.0
Mauritius	0.0	0.0	0.0	14.2	52.8	32.9
Mozambique	3.1	24.8	32.5	32.9	6.7	0.0
Namibia	0.0	12.9	33.8	30.4	10.6	12.3
Seychelles	0.0	0.0	0.0	0.0	28.8	71.2
South Africa	1.0	14.9	19.7	30.2	14.0	20.3
Swaziland	0.0	3.5	29.3	51.8	13.1	2.3
Tanzania	1.4	30.6	45.5	22.5	0.0	0.0
Uganda	3.6	32.6	40.6	19.1	3.5	0.7
Zambia	4.6	37.0	30.6	25.0	2.0	0.8
Zanzibar	2.0	40.5	39.0	17.7	0.0	0.9



From Mioko Saito, 2007, *Construction and Application of SACMEQ School Resources*, UNESCO

The qualitative nature of the mission of education—expressed through policies, curricula, and assessments—continues to grow more complex. The world of education is being reshaped by the social forces of gender, national identity, and social cohesion; by the economic winds of global commerce; and by the intellectual currents of information communication technologies. For most children in developing countries, first grade is a threshold to this new world.

It seems unlikely that the way forward will be made by either quantitative strategies or qualitative strategies separately, but through a new approach that weaves these strategies together. Education designers grappling with the challenges and opportunities EFA has created are beginning to shift attention from purely quantitative objectives that produce more schools or train more teachers. They are starting to address the qualitative nature of human and physical resources, policies, and practices and how these can support learners in the first grade. They are also considering how to use quantitative inputs to leverage education systems that are qualitatively different, more locally responsive, and consistently produce significantly more useful outcomes for the diverse communities they serve.

REACHING THE *underserved*

National education plans of 45 countries, including the 20 with the highest numbers of out-of-school children, were reviewed to see which categories of children and adults governments considered marginalized. The country plans contain proposals to attract more children to school (UNESCO-IIEP, 2006). One of the most common approaches to reaching the previously underserved is to reduce both the direct and the opportunity costs of education by abolishing tuition fees, providing learning materials and uniforms, and introducing demand-enhancing measures such as free school meals and scholarships.

18 COUNTRIES list measures to address cultural obstacles, notably for girls, such as increasing the number of female teachers and ensuring that schools are girl-friendly.

8 COUNTRIES in Latin America and the Caribbean intend to introduce local languages into the curriculum, and **ANOTHER 8** plan to raise demand for education through information campaigns targeted at parents and communities.

National plans discuss key government strategies to overcome the many barriers facing people living in remote areas. **15 PLANS** identify increasing the number of schools in remote locations as a key priority.

Strategies also include **BUILDING MORE** boarding schools and local village schools, designing mobile classrooms, and introducing bus service.

6 COUNTRIES intend to introduce flexible school schedules and calendars, notably in areas where children work on farms.

43 COUNTRIES have no constitutional guarantee of free and compulsory basic education, while **37** limit education to citizens and legal residents, discriminating against the children of migrants, guest workers, and temporary residents.

From UNESCO, 2007, *Global Monitoring Report*

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A FRAMEWORK FOR
success
IN FIRST GRADE

Buildings succeed because their designs follow established principles of physics and aesthetics. The workmanship of an individual skilled worker and the use of high-quality materials contribute to the overall outcome of the project. But no quantity of labor, skilled or otherwise, and no quantity of materials, good or poor, can compensate for a structure that disregards fundamental principles.

Education structures, too, must attend to fundamental principles. Education structures that disregard sound principles cannot succeed, regardless of how many teachers are deployed and how many textbooks are available. Research and observation of effective schools and effective systems around the world offer some ideas about the characteristics of education success. Practices that support learners and learning can be traced back to some well-known principles that give an education system its structural integrity.

Principles that have proven effective in ensuring the successful learning of all children are:

- Maximize Opportunities to Learn
- Build Multiple Support Structures
- Create Learning Communities
- Integrate Education with Other Child-Oriented Systems

How can these principles inform specific strategies for ensuring success in first grade, especially in under-resourced contexts?

PRINCIPLE

1

MAXIMIZE *opportunities to learn*

Education structures that support first grade students maximize opportunities to learn by providing more time for instruction and practice. Students who spend more time receiving instruction and guided practice are more likely to achieve success than are those without access to this extra time. Curricular structures add a qualitative dimension to this principle by ensuring that teachers and learners spend more time acquiring objectives of high education value.

Education systems maximize opportunities to learn by extending the amount of instructional time available during the school day. Pre-class and after-school programs stretch the school day and extend the number of instructional hours in the school year. Opportunities to learn can also be increased by reducing the causes of student and teacher absenteeism.

Obviously, just expanding the amount of time children spend in school matters little unless the education structure also addresses how children and teachers use the available learning opportunities.

One policy that maximizes opportunities to learn is to place the best-skilled teachers in first grade classrooms. Such teachers must be specialists in early childhood education. Most young children have a natural curiosity about the world they inhabit, and effective first grade teachers understand how to tap that natural curiosity and apply it to learning in school. Teachers who are knowledgeable about developmentally appropriate curricula, active learning pedagogy, and child development can make these individualized links through a student-centered approach.

School Effectiveness Research in GUATEMALA

AED's school effectiveness study, conducted by the USAID-funded Education Quality Improvement Program 2, assessed schools in Guatemala, Nepal and Ethiopia along Opportunity to Learn factors. While the study focused primarily on testing and observing student performance in reading at the grade 3 level, researchers also collected extensive data on time loss due to school closures and absenteeism. The information below was collected from Guatemala.

Of the 180 official schools days, the 26 schools were closed an average of 8.5 days/year. Teacher and student absenteeism accounted for an average of 22.7 and 14.4 additional days of missed instruction, respectively, bringing the overall time for remaining instruction down to 134.4 days/year. When time was deducted for late start times, early closings, and extended recess, students had only 96.8 days/year of instruction, or approximately 3.6 hours a day of classroom instruction, compared to the officially mandated 5 hours.

At the 26 schools that were part of this study, classroom observations were conducted in 99 classrooms. The observations sought to collect data on what students were doing with their time in the classroom when teachers were on and off task.

The study found that teachers in grade 1 classrooms were on task 70% of the time, while students were on task approximately 60% of the time. On average, 11% of students were engaged in social interaction during the hour-long observation, and an average of 23% of students were completely unengaged in learning activities.

WHAT IS *reading?*

Reading is understanding written texts and consists of two related processes: word recognition and comprehension. Readers use background knowledge, vocabulary, and grammatical knowledge to help them understand written text.

Oral language
Research shows a close link between oral vocabulary and early reading ability. Before children associate the written form with speech, they need to learn the vocabulary, grammar, and sound system of the oral language.

Phonological awareness
Phonological awareness refers to the ability to attend to the sounds of language. Regardless of the writing system, there appears to be a universal phonological principle in reading.

Fluency
Fluent readers read text accurately, quickly, and with expression. Fluent readers recognize words quickly and know where to place emphasis or pause while reading.

Vocabulary
Words that are recognized in print have to match a reader's oral vocabulary. This is important for children who are developing oral proficiency as well as for nonnative speakers of a language.

Prior knowledge
World knowledge, cultural knowledge, subject-matter knowledge, and linguistic knowledge are important reading factors. Instruction should be sensitive to the knowledge needed for the reader to understand a text.

Comprehension
Comprehension is an active process. Readers actively draw inferences from the words a writer uses. Readers are aware of how well they understand a text while reading and take active steps to overcome comprehension difficulties.

From Elizabeth Pang, Angaluki Muaka, Elizabeth Bernhardt & Michael Kamil, 2003, *Teaching Reading*, International Academy of Education

MAXIMIZE OPPORTUNITIES TO LEARN

PRINCIPLES OF *teaching science*

- Think of science teaching as a purposeful means to an important end: student learning.
- Concentrate on the core scientific ideas that have the greatest importance.
- Promote deep scientific understanding through teaching that mirrors the nature and characteristics of inquiry in science, the values of science, and the body of scientific knowledge.
- When designing and teaching science lessons, consider the complex interaction among learners' biological maturation, prior knowledge and experience, and reasoning abilities, so the lessons challenge but do not overwhelm learners' cognitive capabilities.
- Teach using strategies and techniques that help learners become active thinkers.
- Connect science content with students' interests and personal lives, societal issues, and other school subjects.
- For all students, set high expectations for learning.
- Use teaching strategies that lessen students' potential anxieties and perceived conflicts when teaching scientific ideas that may be controversial for learners, even though they are not controversial among scientists.

From John R. Staver, 2007, *Teaching Science*, International Academy of Education

Effective teachers also maximize opportunities to learn by using instructional techniques that engage and build on children's curiosity. They encourage children to make predictions, test hypotheses, and share personal opinions. Effective teachers maximize learning by helping individual children make personal connections among their prior knowledge, what they learn in school, and their lives outside of school. To accomplish this, teachers must have an extensive repertoire of effective instructional techniques that is sufficiently varied and powerful to meet the needs of increasingly diverse students in a variety of learning tasks and contexts.

Teachers can also maximize opportunities to learn by using pedagogies that actively engage all learners. Collaborative learning, paired-instruction, and every pupil response, such as signaling techniques that enable the whole class to respond to teacher questions, ensure that each child is actively involved in the learning activity, even in overenrolled classrooms and classrooms with few resources.

TEACHING MATH WITH *small groups*

Research findings clearly support the use of small groups as part of mathematics instruction. This approach can result in greater student learning, as measured by traditional achievement measures, as well as in other important outcomes. When using small groups for mathematics instruction, teachers should:

- Choose tasks that deal with important mathematical concepts and ideas.
- Select tasks that are appropriate for group work.
- Consider having students initially work individually on a task and then follow this with group work where students share and build on their individual ideas and work.
- Give clear instructions to the groups and set clear expectations for each.
- Emphasize both group goals and individual accountability.
- Choose tasks that students find interesting.
- Ensure that there is closure to the group work, where key ideas and methods are brought to the surface either by the teacher or the students, or both.

From Douglas Grouws and Kristin Gebula, 2000, *Improving Student Achievement in Math*, International Academy of Education

active schools APPROACH

The active schools approach has its foundation in the Escuela Nueva model developed in Colombia during the 1970s. The model was developed primarily to address the needs of rural multigrade teachers. AED has been implementing the active schools approach for more than 17 years in Equatorial Guinea, Guatemala, Nicaragua, and Peru.

The active learning approach prioritizes interactions that are meaningful and relevant to the lives of the participants. The active schools approach also encourages development of leadership skills in students through their role in their own education, through projects in the community, and through student governments in each grade, which model participatory civic and democratic behaviors in the classroom.

Students work together in groups using self-paced learning guides, which enable the teacher to be a learning facilitator, moving among different groups and grades to provide personalized feedback and guidance to students. Teachers are supported in the classroom through on-site visits by facilitators who provide technical support by observing, sharing feedback and advice, and brainstorming and problem solving with teachers. Teachers also participate in teacher learning circles, where they share experiences and learn from each other by discussing what has and has not worked in their classrooms.

While empowerment and flexibility are key elements of the model, at its core, it is a structured approach that provides students and teachers with the tools and resources necessary to improve educational quality and learning.

Increasing the amount of time first grade children spend on school activities does not address the essential problem, which is that individual children in the first grade learn at very different rates. Thus, individual children require differing amounts of time to master learning objectives. Differentiated instruction, self-paced learning, intensive tutoring, and other techniques provide each child the amount of time he or she needs to achieve success.

An effective education structure must also embrace informal learning opportunities that extend the school day and the first grade classroom. Extracurricular activity programs (for example, read-alouds, song and story times, gardening and environmental cleanup) organized by collaborations between schools and community associations provide parents and other caregivers with useful strategies to support and supplement classroom instruction.

Activity Learning in JORDAN

The new kindergarten curriculum for Jordan emphasizes inquiry and activity learning. The classroom is divided into activity areas that engage the students in tasks and activities that are connected to a particular theme. For example, “water” is an important topic that is integrated into the instructional program through learning stations in the classroom.

Learning stations are set up for small groups. The children move around the room in accordance with the lesson and the theme, and they gather in the middle for group instruction. These areas around the classroom create smaller group instruction environments and help to guarantee that each child in the group has some active learning experience. In this way, the room reflects the ecology of learning and structures and supports the activities associated with different learning experiences.

MAXIMIZE OPPORTUNITIES TO LEARN

CHARACTERISTICS OF *Effective Teaching*

1. **Make content meaningful** by using an understanding of content and tools of inquiry to create experiences that make subject matter meaningful for students.
2. **Understand child development and learning theory** to provide lessons that support children's intellectual, social, and personal development.
3. **Understand learning styles** and how students differ to create opportunities adapted to diverse learners.
4. **Use instructional strategies/problem solving** to encourage critical thinking, problem solving, and performance.
5. **Understand motivation and behavior** to create learning environments that encourage interaction, engagement, and self-motivation.
6. **Understand and use communication techniques** of verbal, nonverbal, and media to foster inquiry, collaboration, and supportive interaction.
7. **Plan for instruction** based on knowledge of subject matter, students, the community, and curriculum goals.
8. **Use assessment**, including formal and informal strategies, to monitor each child's continuous intellectual, social, and physical development.
9. **Understand reflective practice** to evaluate each child's actions and seek opportunities for professional growth.
10. **Create interpersonal relationships** to foster relationships with peers, parents, and agencies to support students' learning and well-being.

The Interstate New Teacher Assessment and Support Consortium (INTASC) of state education agencies and national educational organizations in the United States is dedicated to the preparation, licensing, and ongoing professional development of teachers. By applying the characteristics above, teachers assure that all children learn and perform at high levels.

For more information go to the Council of Chief State School Officers website, *www.ccsso.org*

Outreach programs help children expand opportunities to learn in the community through thoughtful and meaningful projects. Even parents with few or no academic skills can be valuable resources, especially when professional teachers guide their efforts.

Children entering first grade as a result of universal primary education initiatives are often situated in the most economically and geographically challenging contexts. Regular school attendance requires policies that address these economic and geographic challenges. Ensuring that schools provide quality services, services that parents perceive as worth the opportunity and economic costs of sustaining their child's attendance, is an important start. But targeted strategies also include tangible incentives such as feeding programs, health clinics, community centers, child care, cash scholarships to children, and direct compensation for parents.

Education structures must also address teachers' needs to maximize their own opportunities to learn. After all, teachers are important models for children in first grade. Young children who see adults engaged in learning begin to understand that learning is valuable as well as pleasurable.

Education systems can support teacher reflection, self-evaluation, and opportunities to learn from peers. Teachers need opportunities to continue learning in fields and disciplines of personal interest; these investments will pay off in improved teacher quality and enhanced morale. Education systems can leverage even modest investments in resources, time, recognition, and other incentives to support teachers' opportunities to learn.

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PRINCIPLE

2

BUILD MULTIPLE *support structures*

BUILD MULTIPLE SUPPORT STRUCTURES

All systems, no matter how clearly envisioned or skillfully implemented, include some potential for failure. Atypical circumstances, special needs, and unanticipated combinations of factors can expose gaps in any system. The cracks in those systems are not filled by extraordinary individual effort or by good fortune. Large-scale, complex systems succeed because they include multiple layers of support structures, such as contingency mechanisms, redundancies, and other fail-safe apparatuses that allow for corrective adjustments. Structural redundancy cannot eliminate problems, but it can minimize the likelihood that a single malfunction, flaw, or deficiency will result in absolute failure.

The developmental nature of learning suggests that every first grade classroom in every country contains significant numbers of children who are at risk of failure for a wide variety of cognitive, social, linguistic, economic, and physical reasons. Education support structures that ensure success in first grade anticipate these causes of potential failure and build redundancy into the system to ensure overall success.

Without these multiple layers of support built into the education structure, many first grade children fail because the gaps between what the child knows and can do and what the curriculum requires of him or her are too many and too great. Unfortunately, many children who enter first grade cannot rely on their parents to compensate for such gaps. Parents of these children often have little or no formal education, and the language they speak may not be the language in which their children are learning.

The education system must overcome the gaps by providing not one but redundant layers of support. It is difficult to guarantee success for all first grade children if educators do not provide adequate and appropriate layers of support.

Success in EL SALVADOR

In El Salvador, a new competency-based curriculum was developed and implemented with an evaluation mechanism that gauges student performance. The evaluation mechanism, continuous assessment, enables teachers to adapt curriculum for students who require extra support or remediation. This approach, developed by the Ministry of Education in partnership with USAID, was created to improve learning and, ultimately, to reduce the country's high repetition and dropout rates.

Continuous assessment involves collecting information on student progress in the classroom and using that information to make decisions about what to teach and how. With a clear understanding of the skills each child in the classroom possesses, teachers can adjust lessons to respond to the needs of the students. For disadvantaged students, continuous assessment presents a valuable opportunity to "get back on track" because the teacher can provide learning exercises that respond more precisely to the child's challenges. When teachers implement continuous assessment, evaluation becomes an integral and ongoing part of the learning process.

Like other planners, educators cannot afford to wait until structural failure takes place before acting. Education policymakers, administrators, and teachers must ask:

- Where are our first grade children likely to fail?
- What challenges must children who are new to formal education overcome to be successful in school?
- What sorts of supports can we build into our programs now to help children overcome obstacles to success when they encounter them?

Implementation of redundant support is evidence that the educators who design these systems have assumed responsibility for the success of every child.

assessing CHILDREN'S LEARNING AND DEVELOPMENT

In developmentally appropriate programs, assessment and curriculum are integrated. Teachers continually engage in observational assessment to improve teaching and learning. Accurate assessment of young children is difficult because their development and learning are rapid, uneven, episodic, and embedded within specific cultural and linguistic contexts. Too often, inaccurate and inappropriate assessment measures have been used to label, track, or otherwise disable young children.

- Assessment of young children's progress and achievements is ongoing, strategic, and purposeful.
- The content of assessments reflects progress toward important learning and developmental goals; assessment is integrated with planning for instruction.
- Assessment relies heavily on the results of observations of children's development, descriptive data, collections of work, and demonstrated performance during actual, not contrived activities.
- Assessments are tailored to a specific purpose and are used only for the purpose for which they have been produced.
- Decisions that have a major impact on children, such as enrollment or placement, are never made on the basis of a single developmental assessment or screening, but are based, instead, on multiple sources.
- Developmental assessments and observations are used to identify children who have special learning needs.
- Assessment recognizes individual variation in learners and allows for differences in styles and rates of learning.
- Assessment legitimately addresses not only what children can do independently but also what they can do with assistance from other children or adults.

From the National Association for the Education of Young Children (NAEYC), *Distinctive Characteristics of Early Childhood*, *www.naeyc.org*

INVESTING IN *learning materials*

Textbooks and learning materials show the highest incidence of impact for improving primary school outcomes in many developing countries. This may reflect the fact that developing countries, due to budget constraints, have been underfunding such resources for a long time, leading to their relative scarcity. Not only production function studies, but random evaluations as well support the influence of textbooks and learning materials. The OED education sector evaluations in Ghana and India support the importance of interventions for learning materials.

However, the Glewwe and Kremer randomized study in Kenya provides some caveats. The learning materials must be appropriately designed so they are not too difficult for the typical rural primary school, and teachers must be trained in conjunction with the introduction of learning materials. Thus, local conditions must be factored into the design of such materials.

The interesting feature of improving learning materials is that this can be done at a unit cost that is reasonable compared to gross domestic product (GDP) per capita and cost per student, and the improvement in efficiency of education can be substantial (Pritchett and Filmer, 1999). Providing learning materials could receive priority over reducing class size once class sizes have reached a level of about 40 students. Yet there are too many cases, especially in sub-Saharan Africa, where class sizes are well above 50 students, a situation detrimental to good learning outcomes.

From Maurice Boissiere, 2004, *Determinants of Primary Education Outcomes in Developing Countries*, World Bank

Redundant supports take different forms. They may be built into education policies through developmentally appropriate curricula. Such curricula are written with the understanding that children develop in nonuniform ways, and that the benchmarks of learning, particularly in first grade, offer children redundant opportunities to encounter and master key learning objectives.

Teachers build in redundancy for learning content knowledge by integrating objectives from multiple disciplines. They may reinforce reading objectives by integrating reading instruction in content areas, such as science or geography. Integrated interdisciplinary instruction offers students multiple exposures to the same information, but in different contexts.

Integrating learning objectives also allows teachers to compress the curriculum, which gives them the space and time to reteach critical skills and content for children who fail to reach learning objectives when they are first introduced.

Teachers who use continuous monitoring pedagogy, even in overenrolled first grade classrooms, are able to assess whether individual children have mastered the key learning objectives of a lesson before proceeding to the next lesson objective. Waiting until the end of a unit, semester, or school year to detect mastery or failure will be of little value to the first grade child. Diagnostic teaching methods enable teachers to make informed, on-the-spot decisions about reteaching or clarifying children's misunderstanding or misperceptions.

Success in EGYPT

As part of AED's Egypt National Books Program, funded by USAID, nearly 22 million books, selected and edited by Egyptian educational specialists and published and printed by Egyptian companies, were provided to more than 11 million Egyptian primary school students in approximately 21,500 schools in 27 governorates of Egypt. Each school received professionally designed and constructed, space-efficient cabinets to house and display the book collections. Supplemental enrichment materials were also provided, which included oversize reading books for more than 17,000 Kindergarten 1 and 2 and Primary 1 and 2 classrooms.

Instructional materials also provide redundant support. For example, teachers who lecture place a burden on first graders' ability to learn. This is especially challenging for children who may be listening to a school language that is different from their home language. This type of instruction requires the young child to recall from memory key content from one day to the next.

Even in resource-poor classrooms, teachers can provide wall charts, drawings, alphabets, and objects, as well as other permanent visual references, as redundant support for the child's auditory memory. These multiple supports enable children to revisit them as often as necessary until they no longer need to.

Educators use the term "scaffolding" to describe this type of instructional support. The notion of scaffolding implies that instructional supports are temporary and are required only while the child is passing through a critical phase of the learning process toward developing new ideas or skills. Remove the scaffolding prematurely and the project will collapse.

One way of addressing the need for redundant supports is to provide more adult teachers. School systems often lack the resources to hire additional teachers; however, there may be underused teachers, paraprofessionals, or education administrative staff at the local and district level. Pre-service teachers are also a flexible resource. Effective managers explore creative ways to increase the number of adults deployed to support children in first grade by adapting the job descriptions of existing employees.

Redundant support is not the same as duplicated support. What is often needed is qualitatively differentiated support. Children who fail to master key learning objectives in a classroom setting may benefit from small-group instruction. Children whose parents cannot assure their regular attendance may benefit from intensive individual tutoring when they do return to school. Children who are learning in a second or third language may require special language instruction assistance.

Just as first graders need redundant support to achieve their learning goals, so, too, do teachers. Support for them can come from an instructional leader such as a head teacher, principal, or mentor. Professional development programs that are ongoing and implemented on-site with classroom follow-through provide redundant support; one-time workshops do not.

Learning always involves some measure of risk as the learner steps away from the familiar and known to the new. Both teachers and students need solid supports that reassure them they will not fall.

FURTHER READING

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PRINCIPLE

3

CREATE *learning communities*

CREATE LEARNING COMMUNITIES

Education typically is thought of as a set of interactions between teacher and students, or between students and their peers. But such interactions are situated in contexts that can have a profound impact on what young children take away with them from school.

This learning context is extensive and comprehensive. It includes the immediate environment of the first grade classroom. But the context also extends to the ethnic and cultural values and traditions of children and their families and to the political horizons of the government and the children's future. For this reason, it is critical that education systems create classroom learning environments that embrace these facets in ways that support learning and celebrate the value of learning and learners.

Creating learning communities is especially critical for children encountering formal education for the first time. Young children need to see obvious evidence that their classroom and school is a community where each child is valued. They should find welcoming and inclusive classrooms, where furniture, equipment, and materials are child appropriate.

Even in school communities with modest resources, the classroom environment can be shaped to welcome young learners and to provide reassurance that this place was organized intentionally for their well-being and comfort. Perhaps they will see a special place where children's work is displayed or hear words of praise that identify specific efforts and achievements. The sights and sounds that make up these learning communities must reflect the diversity of language, culture, and gender represented in the class.

project-based learning IN FIRST GRADE

The active schools approach uses projects as a key strategy to welcome and attract students to school.

Teachers guide students through a series of long-term activities, or projects, that allow first graders to develop communicative capabilities, including reading and writing. The projects feature real-life situations that enable students to communicate about daily life, share experiences, reflect on their actions, write spontaneously, and read real texts. The projects, which can be adapted easily to a particular context, include, "My Name," "The Store," "Animals and Plants of the Community," and "Local Celebrations."

At the heart of the strategy is the use of "significant expressions" to develop several critical competencies simultaneously for first graders—cognitive, communicative, linguistic, and visual motor. In the first project, "My Name," students use real language instead of decodifying words as they learn to read and write their own names. At the same time, they begin to develop their own identities, form positive self-images, and learn to think for themselves.

From conversations with Oscar Mogollón

language OF INSTRUCTION

Linguistic specialists argue that children who learn in their mother tongue for the first six to eight years (an approach known as the additive bilingual model) perform better in test scores and self-esteem than do those who receive instruction exclusively in the official language (subtractive model) or those who make the transition too soon (before age six to eight) from the home language to the official language (transition model) (Thomas and Collier, 2002). It is also easier to become a competent reader and communicator in one's mother tongue.

Once children can read and write one language, they can transfer those skills to other languages. Bilingual learning environments tend to be more comfortable for children than are monolingual settings. Evidence from Bolivia, Guinea-Bissau, Mozambique, and Niger shows that parents are more likely to communicate with teachers and participate in their children's learning when local languages are used (Benson, 2002).

From Maurice Boissier, 2004, *Determinants of Primary Education Outcomes in Developing Countries*, World Bank

Success in PERU

As part of an effort in Peru to integrate parents into learning activities, AED's Peru AprenDes project, funded by USAID, helped rural communities promote reading by parents, community members, and students. While AprenDes helped the communities organize and create priorities and plans, each community developed its own strategy.

In the village of Alto Junao in San Martin, community members decided to set a family reading hour. During this time, teachers could visit families and help parents learn how to work on reading comprehension with their children. However, since most families didn't come back from the fields until late afternoon, there was little time for teachers to work with them. The community members decided to start working earlier in the day to accommodate afternoon reading time. Later, the community developed a traveling library where families exchanged books and texts each family had written so there was a constant supply of reading materials. Over time, parents became more experienced and no longer needed teachers' support, so the student government took over managing the traveling library. Through the work at home, several parents gained experience and interest and now fill in for absent teachers.

The traveling library concept was so popular that it has spread to many other project schools, each with its own variations. In Nuevo Egipto, the traveling library occurs Saturday night in the main plaza; community members select books and are invited back every day to read in the plaza. There has been so much interest that community members are seeking to expand the library and are adding puzzles, chess, and other educational games.

In Amarayi, students collected more than a thousand books through a "Book March": students went to the provincial capital to seek book donations. Community members then built and equipped their own library and have continued promoting reading as part of their culture.

In Peru, as part of an effort to integrate parents into learning activities, AED's Peru AprenDes project, funded by USAID, helped rural communities promote reading by parents, community members and students.

Yet another rural community, El Cedro, decided to have a competition for parents on reading comprehension. Before the event, teachers organized the parents by reading level and provided training in reading comprehension. For the competition, parents received texts based on their reading levels, including one for illiterate parents who interpreted images rather than written texts. The activity stimulated interest among the parents, who built their own comprehension skills so they could help their children.

Creating such environments need not require extraordinary resources. An effective classroom environment reinforces the image of a learning community by displaying the tools, trophies, and paraphernalia of learning.

Another way to create an effective learning community is to build in predictability. Predictability relieves children of the anxiety that comes from trying to make sense of a disorderly or chaotic situation. Effective teachers establish predictable routines, patterns of behavior, and schedules and stick to them.

Teachers create learning communities by making the learning process transparent. Young children can easily come to view the process of learning as the acquisition of decontextualized, random information. Effective teachers think out loud, model learning behaviors, and learn alongside their students. Effective instructional techniques help children link new information and new concepts to their familiar background experiences and prior knowledge.

In such classroom communities, children come to view learning as a process where school ideas build on the foundations of their familiar knowledge.

STANDARDS FOR *family-school partnerships*

Welcome all families into the school community—Families are active participants in the life of the school and feel welcomed, valued, and connected to each other, to school staff, and to what students are doing.

- **Communicate effectively**—Families and staff engage in regular, two-way, meaningful communication about student learning.
- **Support student success**—Families and staff collaborate to support students' learning and healthy development at home and at school.
- **Speak up for every child**—Families are empowered advocates for their own and other children to ensure that students are treated fairly and have access to learning opportunities that support their success.
- **Share power**—Families and staff participate equally in decisions affecting children and together inform and create policies, practices, and programs.
- **Collaborate with community**—Families and staff collaborate with community members to connect students, families, and staff to expanded learning opportunities, community services, and civic participation.

These standards are PTA's framework for how families, schools, and communities should work together to support student success.

From the National Parent-Teacher Association. For the Standards Implementation Guide, go to *www.pta.org/bsp*

CREATE LEARNING COMMUNITIES

Instead of leaving it up to the child to make sense of the school activities, effective teachers explain to young children what they are learning, why they are learning it, and how they can apply it to their lives outside of school. First grade children need to see direct and explicit links between school activities. When teachers explain how such tools as reading, counting, asking questions, and making and testing hypotheses can apply to children's lives, they make a compelling case for the value of learning.

Every community has its own established ways of doing things. Teachers induct first grade children into the community of learners by ensuring they acquire the special language, habits, and attitudes of learners. Helping young children set their own goals, and providing them with strategies for monitoring their progress toward those goals are important in that process.

Young children quickly learn that tests and other types of assessments are regular parts of the learning community. Assessments of pupil performance in reading and math help teachers monitor the effectiveness of their teaching and their programs. But assessments are intrusive and often dominate the other aspects of the learning community, dwarfing the importance of other valuable activities. Teachers help children and parents place formal assessments into proper perspective. Teachers build authentic assessment into the learning community as a tool learners use to reflect on their progress.

Success in EQUATORIAL GUINEA

AED's Program for Educational Development of Equatorial Guinea (PRODEGE), funded by the Hess Corporation, established Achievement Days to stimulate community participation. Achievement Days provide an opportunity for the community, teachers, children, youth, and educational authorities to celebrate achievements in supporting local schools. The Moka community recently celebrated an Achievement Day that included cultural activities and progress reports of school and community achievements.

- A girl presented posters with mathematical symbols and letters of the alphabet, created with support from parents and under the guidance of a teacher. The posters will be used as reference materials in grades 1 through 3.
- The Committee for Academic Achievement and Study presented a map of the community. Parents were proud of the design because they all took part in creating it. Soon it will be painted on one of the walls of the new school.

During Achievement Day, the Moka community learned to recognize success and set new challenges, such as creating a parents' school and continuing with the plans developed by the community.

Success in CENTRAL AMERICA

The AED School Report Card (SRC) model was developed with schools in the Dominican Republic, El Salvador, Guatemala, Nicaragua, and Honduras in 2004 and 2005 to mobilize communities to boost education quality in their own schools.

In a school of about 600 students, the SRC's Analysis Group members—three teachers, three students, and three parents—reviewed students' grades, observed classrooms, and determined that reading was deficient at all grade levels.

More than 1,000 participants attended the Analysis Group's presentation of SRC findings to the community. One recommendation to promote reading at home was that teachers should photocopy reading excerpts onto a sheet of paper every Friday and ask that a family member and each student read it together over the weekend. At the end of the meeting, parents agreed to identify a family member to do so.

On the following Mondays, students in all grades responded to questions about their readings, and their teachers said that the most stimulating aspect of this activity was the students' enthusiasm. They declared, "I read with my dad," "I read with my mom," or "My brother reads with me."

An informal SRC survey of parents verified that more than 50% of the families in the community were reading regularly with their children. The school adopted this activity and included it in the school's action plan for 2006.

Teachers also help first grade children become independent members of the community of learners by showing them what to do when they become aware that meaningful learning has apparently broken down. Teachers give explicit instruction to young children about various strategies they can use to restore the learning process; these might include asking questions that clarify a task, using examples, referring to a wall chart, or asking a friend for help.

Parents need to be invited and welcomed to join the community of learners, not as guests but as resident members of that community. Many poor children who enroll in first grade typically come from homes where parents have had little or no formal education. In communities with high rates of HIV/AIDS, malaria, or other life-threatening diseases, children may be living with grandparents or extended family members. For children coming from families with little or no formal schooling, the value and goals of compulsory formal education may be vague or abstract. Parents and other caregivers may be unable to help their children understand these purposes or to support the teacher's efforts. Enlisting parents as partners in the education community is essential for achieving success in first grade.

In addition to serving on school governance committees, parents can fulfill valuable and productive roles. To bring parents into the classroom learning community, schools can organize effective programs for orienting and training parent volunteers. School personnel can incorporate parents into the learning community without abdicating their own professional responsibilities.

CREATE LEARNING COMMUNITIES

Teacher Circles in EQUATORIAL GUINEA

AED's Program for Educational Development of Equatorial Guinea (PRODEGE), funded by the Hess Corporation, has established Teacher Circles to provide support for local teachers.

Teacher Circles bring teachers together regularly to discus different topics pertinent to their teaching needs. They review their programs and share experiences, methodologies, techniques, difficulties, and achievements. Facilitators also use the circles to train teachers in specific themes of the curriculum, and they often include locally relevant topics such as malaria, typhoid, and dental hygiene.

Success in NAMIBIA

AED's Basic Education Support Project in Namibia, funded by USAID, hosted Writing for Kids Camp. The camp, attended by 29 primary school teachers and Language Advisory Teachers from the six northern education regions of Namibia, trained participants in developing good stories for young learners on important concepts and issues related to the impact of HIV and AIDS on their lives. Staff introduced the teachers to the wide range of skills needed to develop a sense of audience when writing; understanding and applying the concepts of plot and setting in story writing; and using local knowledge, problem-solving situations, dialogue, and illustrations to bring stories alive for children.

The main outcome of the camp was preparing first drafts of stories for learners; however, another important objective was to improve teachers' skills to teach writing in their classrooms. The teachers practiced several teaching techniques they can use with their own learners. According to one participant, "Working in groups to write a story was challenging; however, it is a very useful strategy for cooperative learning. The session opened my eyes and taught me that our own teachers and learners need to be involved in writing books for classroom teaching."

Parents can listen to children read, manage a resource room or school library, and help create valuable instructional resources. They can also share their personal expertise, skills, and crafts as part of first grade instruction. They can participate in school feeding programs, recreation activities, and outdoor learning programs. Extending the learning community in this way restores vital links between home and school and situates school learning as a complement to the kind of learning young children experience at home.

Schools must be learning communities for teachers as well as students. Effective school directors lead the community of learners through policies that provide time and incentives for teachers to plan together, teach together, and learn from one another. Action research, teacher circles, and other forms of organized reflection and self-study build professional skills while reinforcing the notion that learning is a continual, lifelong process.

Teachers must have learning objectives of their own. They should devise strategies for routinely and periodically monitoring their progress toward those goals and document the accomplishments of their learning community through professional portfolios, scrapbooks, and display cases.

Schools are networked to global learning communities through access to professional societies, journals and publications, and online resources such as the Global Learning Portal (www.glp.net).

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PRINCIPLE

4

INTEGRATE *education with other child-oriented* SYSTEMS

INTEGRATE EDUCATION WITH OTHER CHILD-ORIENTED SYSTEMS

Teaching is typically thought of as an isolating enterprise. Primary classrooms are cut off from one another, and teachers often feel isolated from other adults. This surface appearance can obscure the fact that a first grade classroom is situated within a number of child-oriented systems. Some of these may be education systems of preschool, elementary, secondary, and even teacher education institutions. But other, noneducation systems such as government, health, sanitation, labor, and environment also contribute to the well-being of the first grade child.

Early childhood education programs have been shown to contribute to success in first grade when there are appropriate transitions between programs.

Interventions that focus on schools and teachers often ignore the importance of coordinating child-oriented systems. Can the efforts of education and other child-oriented systems be integrated in such a manner as to ensure successful outcomes for children?

Clearly, schools benefit when they communicate within their own system. One example is the linkage among primary schools. We have already pointed out how first grade teachers create learning communities within their own schools. But teachers can also establish links to teachers in other primary schools. Collaborative programs and information-sharing activities bring primary schools into vibrant and collegial integrated networks that multiply intellectual and physical resources and stimulate innovation and adaptation of proven practice.

THE CASE FOR *early childhood education*

Well-designed early childhood education (ECCE) programs can enhance young children's well-being significantly in the early formative years and in the future, complementing the care they receive at home. Programs that combine nutrition, health care, and education have a positive impact on cognitive outcomes. Participation in ECCE also facilitates primary school enrollment and leads to better results in the first years of school, especially among disadvantaged children. From an economic viewpoint, investment in early childhood programs offers a high payoff in terms of human capital, so there is a strong case for public intervention. Finally, early childhood programs can reduce social inequality: they can compensate for vulnerability and disadvantage resulting from factors such as poverty, gender, race, ethnicity, caste, or religion.

From UNESCO, 2007, *Global Monitoring Report*

Kindergartens in JORDAN

Jordan has been an important exporter of technology talent to the Middle East and elsewhere. Increased competition and the growing complexity of technology work, however, have challenged Jordan's future role in the region. Hoping to develop local technology capacity and continue to be part of the growing economies of the Middle East, Jordan has examined its education system and planned a new reform, designated Education Reform for the Knowledge Economy (ERfKE). Early childhood education features as a high priority preparing students for a more technology-oriented and complex knowledge context in all aspects of society with particular concern for eventual workforce participation.

Before 2004, there were few public kindergartens, and those that did exist or were being initiated were lodged in makeshift classrooms, borrowed from the limited space of elementary grade girls' schools.

AED's ERfKE Support Project (ESP), funded by USAID, provided infrastructural and development assistance to expand public kindergarten education. Within only a few years, the project was assisting 582 kindergartens, and the expansion continues. Approximately 750 kindergarten teachers received a minimum of 120 training hours on the new national curriculum for kindergarten; principals attended seminars on the importance of kindergarten education and how to support teachers, children, and their families; and supervisors were trained to give additional pedagogical support.

To report the progress of the new entrants, more than 7,000 report cards were provided to kindergartens for continuous communication with parents, and a parent involvement program was launched to connect the family with the school and provide assistance to the activity program through parent participation in the classroom. More than 170 classrooms were completely refurbished and equipped with an outdoor playground. Additionally, the project provided approximately 415 kindergartens with improved materials—books, manipulables, and age-appropriate toys—to assist student learning. These improved learning techniques and materials directly serve more than 12,500 Jordanian kindergarten students.

INTEGRATE EDUCATION WITH OTHER CHILD-ORIENTED SYSTEMS

Primary schools can also link to preschool education systems. Early childhood education programs have been shown to contribute to success in first grade when there are appropriate transitions between programs. Preschools serve an intake function for primary schools. By registering children in early learning programs, school directors improve long-range planning.

Primary schools need to link with junior secondary schools as well. Teachers in primary and junior secondary schools can help ensure greater transition between the grades.

In addition to supporting the developmental growth of young children, organized early childhood education programs help young children and their parents prepare for public primary school. Early childhood programs support the transition from learning at home to becoming a member of a school learning community. Early childhood programs help young children develop key metaconcepts about language, math, and strategic reasoning that facilitate rapid success in first grade.

Early childhood programs also help young children develop important cognitive, linguistic, emotional, physical, and social interaction skills. Communication with primary schools enables early childhood educators to help marginalized children develop the essential background conceptual knowledge that forms the basis for success in first grade.

Education can link with other child-oriented systems for similar gains to further ensure children's success in first grade.

Primary schools need to link with junior secondary schools as well. Teachers in primary and junior secondary schools can help ensure greater transition between the grades. Such links enable teachers to share ideas about effective child-centered pedagogy and child development as well as specific content-area information. And integration with secondary schools means that even primary schools with modest human resources gain access to teens who might serve as role models, mentors, and after-school tutors to help support first grade learners.

Education planners integrate pre-service and in-service professional development systems for teachers and administrators. The education of pre-service teachers must include practical experiences in primary school classrooms. This link not only enhances pre-service teacher education, such pre-service teachers also provide an important source of no-cost paraprofessional assistance in overenrolled first grade classrooms. Pre-service program courses might assign novice teachers to work with individual or small groups of students, thereby serving as a kind of redundant resource to young learners. Field experiences enable ideas about teaching and learning to flow back and forth between the first grade classroom and the teacher training institution.

Education can link with other child-oriented systems to further ensure children's success in first grade. This notion of systemic integration is reflected

in the *Millennium Development Goals*. This comprehensive approach links education success with systems that focus on poverty, hunger, child and maternal health, environmental protection, and community partnerships.

These diverse systems of child welfare and development address different aspects of children's life and growth. They interact in important and often reciprocal ways. Children who are healthy and well nourished are better prepared for learning in the first grade, while concepts of nutrition and healthy choices are appropriate content for first grade learners as well.

Access to adequate prenatal care is essential for the health of mothers and the development of healthy infants. Prenatal health clinics can also be advocates for preschool literacy. They can give new parents child-appropriate books, simple learning materials, and suggestions for promoting language development.

Environmental awareness programs directly affect the well-being of young children and their communities. Agencies that promote environmental awareness may provide supplemental education resources, activities, and experts, which can be folded into first grade science lessons.

Links that integrate child health and education provide a critical resource for young children. Children from marginalized communities tend to suffer higher rates of water-borne and contagious disease. Many of these childhood diseases can be contained, treated, or eliminated with proper preventive strategies, including

immunizations, mosquito netting, iodine-enriched diets, improved sanitary conditions, or responsive treatments (deworming, antibiotics). Childhood wellness is essential for enrollment, regular school attendance, and maintaining opportunities to learn.

Children with physical and emotional disabilities may be more likely to enroll in public primary schools if education is free and compulsory. Children with physical disabilities will be severely disadvantaged in classroom environments that restrict their freedom of movement. Children with physical, emotional, and cognitive disabilities require adaptive instruction if they are to be included in mainstream programs.

COMBINING *health & education*

Combined nutritional and educational interventions are more likely to be successful than are interventions that focus on nutrition alone. Studies in Guatemala and Vietnam (Watanabe et al., 2005) found that nutrition packages had a much larger and longer-lasting impact on children receiving sufficient cognitive stimulation. An important implication is that, where health or nutrition problems commonly recur (for example, with seasonal variations in nutritional intake or disease transmission, or where communities are constantly exposed to diseases for which no simple preventive measures exist), educational interventions are as important as are those for health.

From Koichiro Watanabe, et al., 2005, *Early Childhood Development Interventions and Cognitive Development of Young Children in Rural Vietnam*

Visual and auditory impairments have an especially profound impact on children's success in the first grade. Deficient vision and hearing often go undetected before first grade, at which point children first encounter certain visual and auditory activities. As a result, some children are unable to see fine distinctions in letters written on a first grade chalkboard positioned at some distance from where they are seated in a poorly lit classroom. Children with hearing impairments have difficulty discerning subtle differences among letter sounds, especially in overenrolled, noisy classrooms.

Building links to other child-oriented systems strengthens the likelihood of success in first grade as recognition grows that systems and providers share this responsibility for success.

Educators need not be medical providers, but first grade teachers must understand these health and nutrition factors and how they complicate learning. Well-established links between health care providers and schools help ensure that teachers have access to appropriate information. Teachers are often the first to become aware that a young child has problems hearing or seeing or suffers from disease or poor diet. Links between health care systems and education systems make it more likely that children will receive prompt and appropriate support.

Integrating child-oriented systems leverages several benefits. Systems integration means that each system increases care for the child; systems integration creates synergy and promotes innovation; and systems integration creates a holistic, seamless approach to child development. Children experience these systems as coherent, aligned, and natural to their development.

Challenges to integrating diverse child-oriented systems are often ideological and administrative. Resolving these challenges typically includes intensive discussions with diverse agencies during which common ground and shared values and approaches emerge. For educators, creating partnerships with other professionals outside the education system can be challenging, particularly if the educators are used to thinking of education as a stand-alone responsibility.

Building links to other child-oriented systems strengthens the likelihood of success in first grade as recognition grows that systems and providers share this responsibility for success.

FURTHER READING

Dickinson, P, Lothian, S., & Jonz, M. B. (2007). Sharing responsibility for our children: How one community is making its vision for children a reality. *Young Children*, 62[2], 49–55.

Hawes, H. (2003). Health curriculum and school quality: International perspectives. *Compare*, 33[1], 5–14.

Milbourne, L., Macrae, S., & Maguire, M. (2003). Collaborative solutions or new policy problems: Exploring multi-agency partnerships in education and health work. *Journal of Education Policy*, 18[1], 19–35.

Ndiaye, M. (2006). Partnerships in the education system of Senegal. *Prospects: Quarterly Review of Comparative Education*, 36[2], 223–243.

Tadesse, S., & Hoot, J. (2006). Child prostitutes in primary classrooms: Voices from Ethiopia. *Childhood Education*, 83[2], 75.

conclusion

In summary, these four principles—maximize opportunities to learn, build multiple support structures, create learning communities, and integrate education with other child-oriented systems—provide a simple, flexible framework that describes quantitative and qualitative structures that increase the chances that children will be successful in their first year of formal education. These principles lead to a cognitive, physical, and interpersonal foundation that is vital for ensuring that young children stay in school and continue to be successful in the primary grades.

These principles not only help children succeed in school, they also provide structural guidelines to create healthy communities for parents, teachers, and school authorities. As a planning tool, this framework can be used to organize self-study, diagnostic assessments as educators and parents think about the kinds of education systems that create valuable outcomes for children, families, and communities. The framework can also be an effective system for evaluating overall school quality and the basis for a report card on school performance.

Some schools are transformed by charismatic individuals, natural leaders who are able to inspire others by their example.

Some schools are transformed by innovative programs; others are transformed through reconstruction and rehabilitation projects. These transformations have important implications for improving the overall quality of the learning community in which teachers and children work. But transformations of this nature do not reach all schools across all contexts, and even when they do occur, they can be difficult to sustain.

An education framework that embodies sound structural principles, however, can provide both the strength and flexibility to create and sustain quality improvement across all contexts.

The education framework presented here increases the success of children entering first grade by providing various types of supports that make learning inevitable. Such structures accommodate the diversity of experience, ability, and interests with which children must construct their own foundations for success.

Education frameworks structure the behaviors, attitudes, and outlooks of children, teachers, administrators, and others who live and work within the education community. They also offer a way of rethinking and reexamining schools and how valuable resources such as time, people, and money are put to use.

All education systems must address sustainability. However, there is no fixed route to sustainable quality in education. Recent experience reminds us that children, contexts, technologies, and even notions of what counts as quality are continuing to evolve. But the approaches that seem most likely to have a long-term impact on education are those that sustain and reward innovative thinking and behavior and not special programs.

Building a foundation for success in the first grade remains a vital challenge for educators in every country. Governments have pledged themselves to provide institutions that can assure every child a useful and valuable education. The United Nations has gone even further by proclaiming education a human right in its Declaration of the Rights of the Child.

Respecting this obligation would seem to go far beyond selecting efficient tests, introducing specific instructional techniques, or creating more effective information management systems. It means creating institutions of unquestioned integrity organized around the single strategic purpose of helping all children find value in themselves and their rightful place in the world around them. The frameworks that create success in first grade should encourage educators to dare to envision new structures that will stand on those foundations, structures that deserve to house the world's most valuable resources and nurture their future.

RESOURCES

The following information is a sampling of recommended resources for anyone engaged in designing programs to improve quality education in early primary grades.

Professional Societies (USA)

- National Association for the Education of Young Children (NAEYC) *www.naeyc.org*
- National Association of Elementary School Principals (NAESP) *www.naesp.org*
- Association for Supervision and Curriculum Development (ASCD) *www.ascd.org*
- Association for the Development of Education in Africa (ADEA) *www.adeanet.org*
- International Reading Association (IRA) *www.reading.org*
- Association for Childhood Education International (ACEI) *www.acei.org*
- World Association of Early Childhood Educators (WAECE) *www.waece.org*
- National Association of Bilingual Educators (NABE) *www.nabe.org*

International Agencies

- U.S. Agency for International Development (USAID) *www.usaid.gov*
- The World Bank *www.worldbank.org*
- United Nations Educational, Scientific and Cultural Organization (UNESCO) *www.unesco.org*
- The United Nations Children's Fund (UNICEF) *www.unicef.org*
- The World Health Organization (WHO) *www.who.int*
- Pan American Health Organization (PAHO) *www.paho.org*
- International Labor Organization (ILO) *www.ilo.org*
- United Nations Development Program (UNDP) *www.undp.org*
- Organization for Economic Cooperation and Development (OECD) *www.oecd.org*

Agencies, Foundations & Organizations

- Wallace Foundation (Out-of-School Learning Programs) *www.wallacefoundation.org*
- Early Childhood Knowledge Center (U.S. Department of Health & Human Services) *eclkc.ohs.acf.hhs.gov*
- World Wildlife Foundation (WWF) *www.wwf.org*
- Early Connections (technology in early childhood education) *www.netc.org/earlyconnections*
- U.S. Department of Education *www.ed.gov/parents/academic/help/partnership*
- National Parent Teacher Association *www.pta.org*
- National Service Learning Clearinghouse (Parents' involvement in learning in the community) *www.servicelearning.org*
- National Staff Development Council (NSCD) Standards for parent involvement *www.nsdc.org*
- National Coalition for Parent Involvement in Education (NCPIE) *www.ncpie.org*
- Reading Rockets www.readingrockets.org
- The Early Childhood Education Assessment (ECEA) Consortium *www.ccsso.org*
- Focusing Resources on Effective School Health (FRESH) *www.freshschools.org*
- The Partnership for Child Development (PCD) *www.child-development.org*

Other Sites

- First-School First-School *www.first-school.ws*
- Can Teach *www.canteach.ca*
- Pre-School Education.com *www.Preschooleducation.com*
- Home Instruction for Parents of Pre-school Youngsters (HIPPY) *www.hippyusa.org*
- PRAXIS *www.ets.org/Media/Tests/PRAXIS/pdf/0011.pdf*
- Kathy Shrock's Guide for Educators *school.discoveryeducation.com/schrockguide/assess.html*
- The British Association for Early Childhood Education *www.early-education.org.uk*

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