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# Improving educational quality through active-learning pedagogies: A comparison of five case studies

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**This article describes the call for active-learning pedagogies arising from a range of international organizations. It then outlines key philosophical and theoretical foundations of active-learning pedagogies, which explicitly or, more often, implicitly informed such calls. Next the article introduces the purpose and methods of the comparative case studies, prior to summarizing the findings from five countries (Cambodia, Egypt, Jordan, Kyrgyzstan, and Malawi) which served as cases. The findings focus on the national and related international policy discourses, the professional development and other approaches employed to promote active-learning pedagogies, and the outcomes of such efforts. The article concludes by comparing the cases, relating the findings to other studies, and identifying lessons learned for policy and practice.**

**Keywords:** Educational quality, active learning pedagogies, policy, professional development.

## INTRODUCTION

This study was carried out to describe the call for active-learning pedagogies arising from a range of international organizations. Five countries (Cambodia, Egypt, Jordan, Kyrgyzstan, and Malawi) were involved in this study. Spring (2006) opined that active learning methods are considered a means for preparing students to actively influence the direction of political and social systems. Many scholars assert that all learning is inherently active and that students are therefore actively involved while listening to formal presentations in the classroom. Analysis of the research literature, (Chickering and Gamson, 1987) however, suggests that students must do more than just listen: They must read, write, discuss, or be engaged in solving problems. Most important, to be actively involved, students must engage in such higher-order thinking tasks as analysis, synthesis, and evaluation. Therefore, it is proposed that strategies promoting active learning be defined as instructional activities involving students in doing things and thinking about what they are doing. Use of these techniques in the classroom is vital because of their powerful impact upon students' learning. For example, several studies have shown that students prefer strategies promoting active learning to traditional lectures.

## The Call for Active-Learning Pedagogies

Active-learning or student-centered approaches to instruction have increasingly been promoted worldwide by national governments as well as international organizations. Indeed, the range of support for active-learning pedagogies is much greater today than it was when Beeby (1966) published his volume; *To a Quality of Education in Developing Countries*. Although, Guthrie (1990) claims that the book was "widely influential" internationally "in the late 1960s and early 1970s" in efforts "to improve the quality of teaching by changing teaching style toward liberal, student-centered methods," Beeby's voice was less often echoed in that era than it has been in recent years. This can also be said when comparing international organization discourses today with those circulating in the mid-1980s, when Beeby again sounded the call for active-learning pedagogies at a World Bank Symposium entitled: *The Quality of Education and Economic Development*. Beeby (1986) argued that as education systems (particularly primary schools) progress toward higher stages of development "teaching becomes less rigid, narrow, and

stereotyped and less dependent on mass methods of instruction and rote memorization.”

The late-1980s, the 1990s, and the 2000s witnessed an explosion of international research reports and policy documents focusing on reforming teachers' behavior toward active-learning pedagogies. Perhaps one of the most internationally visible policy statements was the document ratified by the World Conference on Education for All (EFA): Meeting Basic Learning Needs, jointly organized by UNDP, UNESCO, UNICEF, and the World Bank, in Jomtien, Thailand, 5-9 March 1990. The World Declaration on Education for All states that “active and participatory [instructional] approaches are particularly valuable in assuring learning acquisition and allowing learners to reach their fullest potential” (Interagency Commission, 1990, Article 4). And in the following year the World Bank published a research-based policy report, in which the editors (Lockheed and Levin, 1991) conclude by summarizing the areas of accord (across cases in book) as a basis for considering generic approaches to developing schools that will become more effective. The emphasis on student learning is to shift from a more traditional passive approach in which all knowledge is imparted from teachers and textbooks to an active approach in which the student is responsible for learning.

Ten years after the World Conference on Education for All, UNDP, UNESCO, UNICEF, and the World Bank co-sponsored a meeting in Dakar, Senegal, attended by representatives from most governments and many international NGOs from around the world. The “Dakar Framework” from this 2000 meeting reiterates an international policy commitment to active-learning pedagogies: “Governments and all other EFA partners must work together to ensure basic education of quality for all, regardless of gender, wealth, location, language or ethnic origin. Successful education programmes require among other things: well-trained teachers and active-learning techniques” (UNESCO, 2000). More recently, USAID (2005) in its global Education Strategy argues that “improving instruction is a complex task that entails a wide range of interventions, supporting improved teacher training, toward adoption of teaching methods that involve students in the learning process.”

Finally, the EFA Global Monitoring Report (UNESCO, 2008) highlights “a trend to revise curricula to make classroom interactions more responsive and centred on the child. There is a move away from traditional ‘chalk and talk’ teaching to more discovery-based learning and a greater emphasis on outcomes that are broader than basic recall of facts and information. This report also mentions that the People’s Republic of China “introduced a new curriculum in 1999, focusing on active learning across the country in primary and junior middle schools by 2005. Interestingly, China adopted such progressive pedagogies as government policy in 1999, apparently as a result of World Bank (as well as UNDP, UNICEF, and UNESCO) discourses, but in the 1920s, before rise and

fall of the Mao-led, communist revolution, John Dewey introduced progressive education ideas that had a major impact on Chinese educational theory (Spring, 2006).

### **Philosophical and Theoretical Foundations of Active-Learning Methods**

Active-learning pedagogies are celebrated by national governments and international organizations in part because they are believed to enhance learning and to lead directly to improved educational outcomes (e.g., cognitive achievement, retention, attainment) as well as indirectly to enhanced economic development (resulting from more capable workers and consumers). Additionally, active-learning pedagogies are valued because they are perceived to better prepare future citizens to effectively participate in democratic polity at local, national, and global levels (Torney-Purta, 1999). For instance, Spring (2006) argues that formalistic forms of education are often used to prepare students to accept and fit into existing systems while progressive forms of education (i.e. active-learning methods) are considered a means for preparing students to actively influence the direction of political and social systems. Additionally, de Baessa et al., (2002) report, based on a study of classrooms attended by children during their first three years of schooling in rural Guatemala, that “use of student-directed small groups is related to the occurrence of democratic behaviors (i.e. taking turns, helping others, expressing opinions) among children of different cultures and genders, although several of the hypothesized behaviors as participation in student government and choosing among viable alternatives were observed infrequently.

However, Alexander (2008) explains that there is (only limited) consensus on what ‘quality’ actually entails, especially when we move from the conditions for quality (infrastructure, resources, teacher supply and of course access, enrolment and retention) to the pedagogy through which educational quality is most directly mediated. Moreover, he indicates that claims about the impact of different pedagogical approaches, such as “‘teacher-centred’ vs. ‘student-centred’, are rarely discussed, let alone evaluated against hard evidence, with the result that they rapidly acquire the status of unarguable pedagogical truth and become transmuted into policy (Alexander, 2008). Guthrie (1990) notes, moreover, that although, the schools of lesser-developed countries are littered with remnants of attempts to change the quality of teaching based on Western philosophies of education that denigrate the formalistic teaching, such formalistic teaching is desirable and effective in many educational and cultural contexts. Furthermore, noting the paradox that rote learning tends to be more dominant in Asian than Western schools, but students in Asian countries tend to outperform their Western country peers

on international achievement tests, Watkins (2007) calls our attention to cultural differences in the perception of the relationship between memorizing and understanding, commenting that Asian students frequently learn repetitively, both to ensure retention and to enhance understanding.

Thus, there is some, albeit contradictory research evidence on the impact of active-learning versus rote memory-oriented pedagogies (see discussion below). Nevertheless, it seems that many of the arguments for active-learning, student-centered pedagogy are grounded more in philosophy and educational theory than they are warranted by empirical evidence. Thus, it is important to review briefly here the long history of philosophical and theoretical debates about the best way to approach instruction.

Active-learning (or student-centered) pedagogies represent a model of teaching that highlights “minimal teacher lecturing or direct transmission of factual knowledge, multiple small group activities that engage students in discovery learning or problem solving, and frequent student questions and discussion (Leu and Price-Rom 2006)”. On student-centered instruction, Cuban, (1984). Active-learning” pedagogies can be contrasted with “formal” or “direct instruction” approaches emphasizing teacher lecturing or direct transmission of factual knowledge, coupled with “recitation and drill” (Spring, 2006). In this regard, we can identify both behavioral and cognitive dimensions on which active-learning, student-centered pedagogies can be contrasted with formal or direct instruction (Barrow et al., 2007; Ginsburg, 2006; Mayer, 2004). The behavioral dimension of active-learning pedagogies focuses on the degree to which instructional practices enable students to engage in verbal or physical behavior, while the cognitive dimension highlights the degree to which teaching strategies enable students to engage in various forms/levels of thinking. Thus, we can identify different philosophical and theoretical notions that have contributed to how the differences between these pedagogical are framed.

The behavioral dimension is perhaps most frequently traced to American philosopher/educator, John Dewey (1859-1952), who developed a pragmatist philosophy, popularized “progressive” or “experiential” education, and promoted learning by experimentation and practice, that is, learning by doing (Dewey, 1938). However, one can also trace a concern for (especially verbal) behavior in learning to: a) Confucius (551-479 BC), who argued for “individualized instruction through discussion;” b) Socrates (470-399 BC), who emphasized involving individual learners “in a philosophic dialogues;” c) Johann Heinrich Pestalozzi (1746-1827), who encouraged “firsthand experience in learning environments;” and d) Friedrich Froebel (1782-1852), who argued for learning via “free self-activity which allows for active creativity and social participation” (Treat et al., 2008). Furthermore, we

should note the more recent theoretical contribution of scholars and educators associated with the Humanist Movement, for example, Rogers (1969), who argued that much significant learning is acquired by doing and that learning is facilitated when the student is a responsible participant.”

The cognitive dimension is generally traced to the work of the French psychologist, Jean Piaget (1896-1980), who “suggested that, through processes of accommodation and assimilation, individuals construct new knowledge from their experiences” (Wikipedia, 2008; see also Piaget, 1969). Another source of influence is the work of Lev Vygotsky (1896-1934), whose writings focused on “the relationship between language and thinking” (as well as “the roles of historical, cultural, and social factors in cognition” (Wikipedia, 2008, Vygotsky, 1962). Moreover, although Qur’anic schools have tended to emphasize rote learning and memorization (Boyle, 2006; Spring 2006), alternative pedagogical traditions associated with Islamic scholars stress students’ active cognitive role in learning. For example, al-Jahiz (776-868) promoted using “deductive reasoning” as well as “memorization” and Abu Nasr al-Farabi (870-950) encouraged “instruction that ensures that both teacher and student participate actively in the process, allowing the instruction to be student-centered! (Günther, 2006). Finally, a more contemporary cognitive psychologist of education, Merl Wittrock (1979), explains that learners have active roles in learning. They are not passive consumers of information. Even when learners are given the information they are to learn, they still must discover meaning. Finally, Alexander (2008), references several studies (e.g. Alexander, 2001; Edwards and Westgate, 1994; Moyles et al., 2003; Nystrand et al., 1997; Smith et al., 2004) to document that three kinds of “teaching talk” (rote/drilling, recitation, and exposition) are most “recurrent” among teachers internationally, while citing various investigations (Alexander, 2006; Barnes and Todd, 1995; Mercer, 2000) to claim that other forms of pedagogical interaction (discussion and dialogue) have greater power to provoke cognitive engagement and understanding.

### **Focus of the Comparative Case Studies**

Although reform initiatives in many countries promote active-learning pedagogies, relatively little is known about variations in how this pedagogical approach is framed by reform policies, how professional development activities are organized to promote it, how teachers implement it, and what constraints are faced in implementation efforts. Government officials, international organization personnel, nongovernmental organization staff, as well as local school administrators and teacher can benefit from understanding how these different aspects of the reform process reinforce or contradict each other in different

contexts and over time. Such understanding can aid in planning and implementing sustainable reforms, including active-learning pedagogies.

Therefore, international teams of researchers conducted case studies in five countries in which the United States Agency for International Development (USAID) projects have provided support to ministries of education in promoting teachers' use of active-learning pedagogies: Cambodia, Egypt, Jordan, Kyrgyzstan, and Malawi (see Megahed et al., 2008; Mizrachi et al., 2008; Price-Rom and Sainazarov, 2009; Roggemann and Shukri, 2009). The research teams sought to address the following research questions in their respective country case studies:

- How and to what extent do key (government and USAID) education strategy and policy reform documents address the issues of active-learning pedagogies (e.g., in relation to behavioral and cognitive dimensions)?
- What are the structure, content, and processes of professional development activities designed to promote active-learning pedagogies and in what ways, if at all, have school leaders and (extra-school) supervisors as well as teachers participated in such professional development activities?
- How do teachers and other educators understand active-learning pedagogies and how and to what extent do teachers' classroom behavior exhibit active-learning methods?
- What factors (e.g., in-service program content/processes, supervisory guidance/support, classroom physical and material conditions, curriculum/examination policies, and cultural beliefs/values) are perceived to have constrained or enabled teachers to implement active-learning pedagogies?

## METHODOLOGY

To address these research questions each case study team analyzed government, international agency, and NGO/project documents (including evaluation reports) as well as examined publications and data bases incorporating relevant statistical data. The various sources (in English and other languages) were identified through an extensive search process, internet-based and through direct contact with key personnel from relevant organizations. In addition, as summarized below, the research teams conducted individual and focus group interviews, and, in some cases, classroom observations:

- o **Cambodia:** Data for this case study were drawn from previously conducted and reported evaluation and research studies (e.g., Nonoyama-Tarumi and Bredenberg, 2009; Tek, 2008), which included systematic classroom observations of teaching and testing of pupils. In addition, the team in Cambodia conducted a series of focus group or individual interviews with 60 teachers participating in USAID/Cambodia-supported activities, 35 steering committee members of project-supported Child Friendly Schools, and 18 key national and regional education officials. Interviewees were asked to

report on changes they perceived in teachers' thinking and behavior as well as the project activities and other factors that enabled or constrained such changes. These data were supplemented by visits, conversations, and informal classroom observations at regional teacher training centers ( Bunlay et al., 2009).

- o **Egypt:** Data for this case study included via focus group interviews with 39 teachers in project-supported schools, 37 teachers in other schools in the same seven focal governorates, 42 school-based training unit staff, and d) 39 local (district- and governorate-level) supervisors. These interviewees were asked about changes in the ideas and actions of teachers and supervisors as well as the project activities and other factors that enabled or constrained such changes. In addition, the team re-analyzed data collected as part of the project evaluation (Abd-El-Khalick, 2005, 2006, and 2007; Megahed and Ginsburg, 2008), using the Standards-Based Classroom Observation Protocol for Egypt (SCOPE) to observe annually more than 700 teachers in project-supported schools and more than 300 in comparison schools. This secondary analysis focused on the results from two scales concerned with teachers' use of active-learning pedagogies: behavior and cognitive dimensions ( Megahed et al., 2008).
- o **Jordan:** Data for this case study were collected via focus group interviews with: 45 teachers (including those working in project-renovated and non-renovated kindergartens); 4 project staff members from the ECE component; 4 MoE headquarters personnel in the ECE Department; and 3 regional-level supervisors responsible for kindergartens. The research team guided the focus group discussions on topics such as: the meanings they attached to active-learning pedagogies, whether they/others had noticed changes toward greater use of such pedagogies, and the factors, experiences, and conditions that have helped or hindered teachers implementing active-learning pedagogies (see Roggemann and Shukri, 2009).
- o **Kyrgyzstan:** This case study was developed using qualitative and quantitative data. Focus groups and individual interviews were conducted involving 105 teachers working in project-supported and other/comparison schools. Two focus group discussions took place in each province. Facilitators engaged interviewees on the following topics: the influence of professional development on the implementation of active-learning pedagogies, features of professional development that constrained and enabled the implementation of active-learning, student-centered pedagogies, and social/policy factors that constrained or enabled implementation of active-learning, student-centered pedagogies. In addition, the team interviewed individually 35 directors and 35 deputy directors of these schools, focusing, among other things, on whether they promoted and mentored teachers to use active-learning methodologies. A total of 530 teachers completed a questionnaire eliciting their opinions and self-reports of their behaviors ( Price-Rom and Sainazarov, 2009).
- o **Malawi:** Data for this case study were collected via focus group interviews with 80 teachers, 64 school management committee/PTA members in 16 schools as well as 24 supervisors working in the 6 districts in which the schools were located. These included 12 project-supported and 4 comparison schools, located in two districts where the project was not functioning. Discussions in the focus groups centered on how active-learning methodologies are being used in the classroom and how government-supported policies and project-supported activities are either encouraging or discouraging the use of active-learning pedagogies (see Mizrachi et al., 2008).

## RESULT OF COUNTRY CASE STUDIES

This section provides a summary of the five country case studies, addressing the above-noted research questions.

### CAMBODIA

Although teaching in Cambodia has traditionally been and remains today mainly teacher-centered, there are signs that active-learning and child-centered pedagogies are starting to catch on. Indeed, only in the most recent decade have educational reform efforts explicitly focused on issues of quality, rather than on quantitative concerns of increasing access. In 1917 the French colonial administration introduced a system for a small proportion of Cambodians, and after achieving independence in 1954 the Cambodian government made some progress at increasing enrolment rates. When the Khmer Rouge came to power in 1975, succeeding in their “socialist” revolution against the US-backed royal government, they not only shut down the formal education system but also were responsible (directly or indirectly) for the deaths of many teachers and other professionals. Thus, after the Vietnamese military helped to oust the Khmer Rouge in 1979 and establish the People’s Republic of Kampuchea, the Cambodian government (with technical assistance and support also from Cuba, the German Democratic Republic, the USSR as well as Vietnam) devoted efforts to reconstructing the system, recruiting teachers, and providing access to schools. As Vietnam withdrew its military and administrative personnel in 1989, civil war raged and school enrolments (among other things) suffered. Following the UN-brokered peace in 1991 and elections in 1993, the Kingdom of Cambodia was (re)established and, with the aid of western intergovernmental (bilateral, multilateral) organizations and NGOs, concentrated on increasing access to schooling.

During the 1990s, in the wake of the World Conference on Education for All in Jomtien, Thailand (Interagency Commission, 1990), initiatives in Cambodia focused mainly on increasing access and retention. In line with the international EFA movement’s highlighting more issues of quality, reflected in the Dakar Framework for Action (UNESCO, 2000), the Cambodian Ministry of Education, Youth and Sports began to promote the concept of “Child Friendly Schools” (CFS). This reform initiative was designed to improve the quality of education in order to build human capital and help people escape from poverty. CFS involved “student-centered” and “active-learning” pedagogies so that students “will be able to successfully reach the four pillars of learning (remembering, knowing, reflecting, and applying)” (MEYS, 2007). Initially, with financial assistance from SAVE Norway and UNICEF as well as and technical assistance from the Kampuchean Action for Primary Education (KAPE), the Ministry developed an initial

group of “child-friendly” primary schools. CFS was expanded to all primary schools in 2002 and then introduced (on a pilot basis) to lower secondary schools in 2004 – with assistance from UNICEF and USAID/Cambodia, which had recommenced its activities in 2003 after a 5-year hiatus.

The Cambodian government and its international partners sought to build capacity and commitment for the pedagogical reforms associated with the CFS concept via both pre-service teacher preparation programs (in provincial teacher training colleges, established in the early 1990s) and in-service teacher development activities (organized through the school cluster structure, initiated in 1993). In-service professional developmental activities followed a national-provincial-district-cluster-school training-of-trainers (TOT) approach. At the school and cluster levels these activities sometimes involved: a) stand-alone teacher trainings, b) on-the-job support, c) bi-annual refresher trainings, d) monthly teacher meetings to discuss successes and challenges/solutions, and e) annual evaluations of teacher classroom instruction along with feedback and follow-up. And, at least for USAID-sponsored in-service activities, workshop facilitators were encouraged to use active-learning pedagogies. Furthermore, the Cambodian government with international donor assistance revised some of the primary and lower secondary curriculum to emphasize active learning and developed a Handbook to guide pre-service and in-service programs which emphasizes the CFS conception of effective teaching and learning (i.e., employing active-learning and child-centered approaches).

Research indicates that pre-service program instructors do not routinely model active-learning pedagogies, student teachers sometimes employ such approaches during micro-teaching lessons, and the quality and intensity of school-cluster-based in-service programs varied significantly (in part, depending on where international project assistance was available). Nevertheless, during interviews, at least the teachers involved in USAID/Cambodia-supported activities reported that they had increased their knowledge and use of active-learning and cooperative learning methods and that their students had become friendlier and more confident to express themselves and participate in class discussion. Less clear, however, is whether teachers understood and were promoting critical thinking or problem solving in their lessons. Interviews with local community members of the CFS steering committees noted that teachers started to use more games and group work in their classes as well as that students could now cooperate/work in groups better and had more confidence in speaking/participating in class.

Interviewees indicated that some of the in-service professional activities were particularly helpful in facilitating teachers’ implementation of active-learning pedagogies. These included lesson planning, making

materials, classroom management, questioning strategies, using games, and setting up learning corners. At the same time, they signaled the need for expansion and improvement in such activities. For example, they suggested having additional training on the new teaching methodologies and on producing/using related instructional materials. They also called for longer workshops and for more resources to be devoted to follow-up activities. The need for more systematic and extensive follow-up guidance and support is greater because there are questions regarding whether school administrators have the capacity, commitment, and time to perform instructional leadership and supervision roles. In addition, interviewees stressed the need for annual recognitions, honors, and awards for teachers who are particularly successful in implementing active-learning pedagogies, particularly given the low salaries currently being paid. Such incentives may be more critical as implementation efforts move from working with initial groups of volunteer teachers to teachers in general.

## EGYPT

Government, international organization, and project documents reveal increasing attention to improving quality of education, often framed as changing teaching and learning processes from a teacher-centered/transmission and memorization-oriented approach to a student-centered and active-learning approach (sometimes explicit referencing behavioral and/or cognitive dimensions). Although a few Egyptian educators criticized the predominance of memorization-oriented, rote learning in schools even before the 1952 Revolution, such discourse did not appear in Egyptian government documents until the late-1970s. This was also the time when USAID/Egypt documents began to mention these issues. While the Egyptian government and USAID/Egypt devoted some attention to improving educational quality through reforming pedagogy during the 1980s, the real shift from a focus on quantitative to qualitative improvements in education occurs in the early 1990s. This shift was coincident with the World Declaration on Education for All (Interagency Commission, 1990) and was reflected in the reform initiatives undertaken by the Egyptian government with support from UNICEF, the World Bank, and USAID/Egypt. Rhetoric and action promoting active-learning pedagogies was even stronger in the new millennium, illustrated in more detail by professional development activities undertaken in context of the USAID/Egypt-supported Education Reform Program (ERP, 2004-2009).

In terms of professional development strategies for promoting active-learning pedagogies for primary, preparatory, and secondary school teachers, ERP initially followed a cascade (training-of-trainer or

TOT) model, flowing from national to governorate to district to cluster and to school levels. Subsequently, ERP employed a refined cascade model, in which project staff organized workshops with expert consultants to train staff of school-based training and evaluation units (SBTEUs), who would then deliver such training to their colleagues in their own schools or in a cluster of schools. By July 2006 ERP further refined its approach to professional development (TOT with supervised practice), adding a step in which ERP staff/consultants supervised the initial practice of the school-based professional developers as they planned and implemented workshops for teachers in their schools or school clusters and sought to insure that all training provided for teachers was also provided for school administrators and supervisors. At times ERP also used a direct training model, in which staff and consultants conducted workshops directly for teachers, but eventually ERP pursued another approach to teacher professional development – collaboration with multiple levels of the training system. In this latter approach ERP staff and consultants collaborated with MOE personnel to design a cascade TOT program, redesign workshop and classroom instructional materials, and implement professional development activities.

The qualitative data (collected via focus group interviews with key personnel) and quantitative data (obtained via standards-based classroom observation of teacher behavior) indicate that at least some of the professional development activities organized through ERP during the period from late-2004 through early-2007 helped to inform educators about the theory and practice of active-learning pedagogies. They articulated – with varying degrees of depth – the rationales and strategies of this pedagogical reform. Moreover, teachers in ERP-supported schools reported that their classroom behaviors had changed toward employing such pedagogies, a view that was reinforced by supervisors and school-based professional development staff. Such change was not generally reported by teachers working in other schools in the seven of twenty-seven governorates on which ERP focused.

Importantly, moreover, these interview findings are supported by quantitative data based on classroom observations, in that teachers in ERP-supported schools increased in their performance of active-learning pedagogies (with respect to both behavioral and cognitive dimensions) more so than other teachers. However, on average teachers in ERP-supported schools exhibited only relatively modest movement toward using active-learning pedagogies.

Furthermore, the fact that even such limited pedagogical change was not evident among teachers in other schools in the focal governorates suggests that the reform was “projectized” (i.e., organized through a pilot project in a sample of settings) rather than implemented on a broader scale as part of an overall system reform. Teachers, school administrators, and supervisors, who

were not part of ERP-supported activities, indicated that, based on what they had heard about the reform pedagogies through formal and informal channels, they were open to change. However, it seems that they were unable or reluctant to even begin implementing active-learning methods without formally organized professional development activities. Additionally, it seems unlikely that they would be able to deepen and sustain such reform pedagogies without on-going guidance and support – at both interpersonal and policy/system levels.

Interviewees indicated the need for the Egyptian government (perhaps with support from international organizations) to create stronger incentives for teachers to reform their instructional methods. Interviewees also highlighted the importance of policy change, going beyond introducing continuous assessment of students and restructuring the examination system, so that teachers, students, and parents would be less oriented to value styles of teaching involving transmission and styles of learning involving memorization.

## **JORDAN**

Government, international organization, and project documents reveal increasing attention to improving quality of education in Jordan. This was especially true after the ascendancy of King Abdullah to the throne in 1999, both for basic education and for early childhood education. While basic education was a strategic focus of the country from independence (1946) onward, the new millennium has seen a growing awareness of the importance of providing early childhood education (ECE), particularly programs in which teaching and learning processes involved child-centered, active-learning approaches rather than teacher-centered, transmission and memorization-oriented approaches. Both government ministries and international organizations seemed to strengthen to this position throughout the late-1990s and early-2000s as Jordan's quality of basic and secondary education improved, and the relatively underdeveloped state of ECE became even more evident. Queen Rania became a passionate advocate for improvement of government-provided early childhood education, and academics at the University of Jordan stepped up to the challenge to enhance educational services in this sector.

As greater attention was directed to ECE, it became clear that there were both quantitative and qualitative problems that had to be addressed. In this context, the World Bank-supported Education Reform for the Knowledge Economy (ERfKE, 2003-2007) reform in Jordan included ECE as one of the major components of the program. USAID/Jordan also saw a need for technical and financial assistance to support this reform and focused a significant portion of the resources of the ERfKE Support Project (ESP, 2003-2007) to improving

ECE in the country, with particular attention given to increasing access and quality (i.e., enhancing classroom environments and reforming teaching practices), especially in underserved rural areas. In terms of professional development strategies for promoting active-learning pedagogies, ESP followed a variety of models, including direct training, cascade (TOT) approach, and collaboration with multiple levels of the training system.

Focus group interviews revealed that teachers, school administrators, and Ministry officials were open to change. The teachers were excited by the idea of child-centered, active-learning pedagogies (most often framed in terms of 'learning by doing' or 'learning through play'), and had a good grasp of strategies they could use to foster such. Many teachers and other personnel reported increased evidence of active-learning pedagogies. However, despite their enthusiasm for this approach, kindergarten teachers noted they needed additional capacity development and supervisory guidance and support, and they were frustrated by the fact that there was no recognition (social or financial) for their efforts to learn and implement active-learning methods in their kindergartens.

Given that just a few years ago there were just 150 teachers in government-provided kindergartens in Jordan, the large number of teachers (and supervisors and school administrators) who now instruct or interact with kindergarten levels and have come to value active-learning pedagogies speaks to the success of the Ministry personnel and project staff in implementing and publicizing reform efforts. Nevertheless, the sustainability of the reform is a looming question. As toys and playgrounds breakdown and as new teachers enter the system, there is a question about whether the Jordanian government can continue to pursue quantitative expansion and qualitative improvement in ECE, while also dedicating efforts to improve other services provision for young children, such as health and nutrition.

## **KYRGYZSTAN**

Since the collapse of the Soviet Union in 1991, the rhetoric of the Kyrgyz Republic (or Kyrgyzstan) has increasingly acknowledged the importance of active-learning pedagogies for improving the quality of education. Kyrgyzstan's participation in the Education for All (EFA) movement, launched in 1990 just before its emergence as a separate nation state, helped align Kyrgyz education policy with international trends that called for educating all children using child-friendly, individualized, and active-learning approaches, thereby mirroring the International Convention of the Rights of the Child (United Nations, 1989).

In 2005 and 2006, government policy shifted in the wake of the results of UNICEF's (2006) Monitoring Learning Achievement (MLA) study and the Program for

International Student Assessment (PISA, 2007). The MLA study cited “outdated” teaching methodologies as one of the factors contributing to disappointing math and reading performance among primary school students, while low scores on the PISA exam demonstrated the need for better application of knowledge and critical-thinking skills among secondary-level students. Government policy shifted to give more emphasis to active-learning pedagogies for developing basic competencies as well as critical-thinking and problem-solving skills required in daily life. Practical application of knowledge was seen as key to preparing young people for active, participatory citizenship and for participation in a national and global market economy.

Intergovernmental organizations and international NGOs supported and often influenced teacher professional development policies and practices. International donor-funded projects were frequently designed to spread active-learning pedagogies to teachers through school-based training that was meant to supplement and even replace the government’s limited teacher in-service training programs. Illustrative are professional development strategies supported by the USAID-funded Participation, Education and Knowledge Strengthening (PEAKS, 2003-2007) project. The project used a somewhat traditional cascade model in which teachers at high-capacity “professional development schools” were trained in interactive methods, and these master trainers subsequently trained teachers at 10-20 near-by cluster schools. Training was reinforced through mentoring, whereby master trainers visited cluster schools to observe teachers in practice and provide feedback, as well as guidance and support, on their implementation of the new teaching methods. The workshops themselves were highly interactive, and involved teachers seated in groups working cooperatively to develop concepts, respond to questions posed, and identify ways to apply new instructional practices to their own classrooms.

According to the survey findings, teachers in the project’s 13 professional development schools or the 127 associated suburban and rural cluster schools were more likely than regular (non-project) suburban and rural schools to report that they “knew perfectly” or “knew well” active-learning instructional methods, though both groups of teachers exhibited understandings of the concepts and techniques. Moreover, individual and focus group interviews indicated that active-learning methods were being used in project schools and non-project schools alike, with teachers in other schools being influenced by other donor-supported projects that also emphasized active-learning pedagogies. The research also revealed, however, that teachers varied in their interpretations of the rationale behind active-learning pedagogies, with some saying that active-learning methods are used to get students interested in studying (with implications for achievement in the cognitive dimension), while other

teachers emphasized helping students learn to express their views and to listen to each other (relevant to behavioral dimension and democratic citizen participation).

These same data demonstrate, though, that a variety of factors have prevented a larger-scale adoption of active-learning pedagogies. For instance, teachers were reluctant to use active-learning methodologies if they did not appear to foster student learning of knowledge and skills required to pass exams in their particular subject area (particularly the case for math and science teachers). Interestingly, the reality of scarce instructional materials encouraged some teachers and discouraged others from using active-learning pedagogies. One set of informants commented that small group work allowed students to share scarce materials, and draw upon other sources of knowledge, such as the internet. In contrast, other teachers said that the limited number of textbooks and other instructional materials hampered them from organizing their lessons in more interactive ways.

Other factors constraining teachers’ use of the reform pedagogies include the fact that regional-level inspectors and school directors, who have not been trained to evaluate active-learning pedagogies, may prevent their implementation. For instance, some administrator respondents indicated that they were at least initially shocked at the idea of integrating academic disciplines and allowing students to work in groups or move freely around the classroom. Although the Kyrgyz government and international donors have made great strides in introducing active-learning pedagogies on the policy level, and many teachers use active-learning approaches in their daily practice, there is still much work to be done to enhance teachers’ and administrators’ understanding about active-learning. Moreover, teachers need further capacity building to be able to implement these methods, while administrators and inspectors need more exposure to techniques for mentoring and evaluating teachers when they implement the pedagogy in practice.

## **MALAWI**

According to official documents the Government of Malawi is committed to introducing and sustaining active-learning pedagogies because they are aligned with democratic principles, they foster critical-thinking and decision-making skills. While the government’s 2001 Policy Implementation Framework document mentions “effective teaching/learning,” the 2007 primary school and primary teacher education curricula provides a more explicit reference to active-learning pedagogies. International intergovernmental organizations and international NGOs have also promoted active-learning pedagogies in various documents and through technical assistance and training projects. Such projects included two complementary USAID-funded and Ministry-



coordinated reform initiatives focused on enhancing teachers' pedagogical practices: the Malawi Education Support Activity (MESA, 2003-2006) and the Malawi Teacher Training Activity (MTTA, 2004-2008).

The MESA project, which was reported to yield increased enrollment, decreased dropout, and improved pupil performance, employed interactive and participatory approaches in teacher professional development. By engaging teachers in participatory methods of dialogue and reflection about their own practices, and helping them to establish personal codes of professional conduct, MESA provided teachers with opportunities to learn good citizenship behavior themselves as well as methods to instill such behavior in their students. MESA also supported the Malawi Institute of Education to create a guide, entitled "Participatory Teaching and Learning: A Guide to Methods and Techniques," which was to be used as part of pre-service and/or in-service training programs in teachers' colleges in Malawi.

While MESA trained teachers in pedagogy, MTTA initially stressed content knowledge training for teachers in the subjects of math, science, and English. However, when the MESA project ended in 2006, the MTTA project added some attention to pedagogy in its training activities. Following a modified TOT approach, MTTA project-supported professional development activities began with consultants training MTTA staff, who then trained primary education advisors at the district level, who subsequently organized large training events for teachers in their districts. Afterwards, the teachers developed their own school-based training activities to supplement the larger trainings. MTTA has also developed Mobile Teacher Training Troupes, a group of retired teachers or teaching experts who were to assist in teacher training activities by visiting a school for a week-long period to conduct classroom observations, demonstrate model lessons in classrooms, and organize after-school meetings for discussions with teachers.

Focus group participants from several MESA and/or MTTA-supported schools reported that the MESA and MTTA projects created a system that provides continuous support to teachers and supervisors in their efforts, respectively, to employ and guide the use of active-learning methods in the classrooms. Teachers not only could articulate the concepts and rationales for employing this approach, they claimed to have made progress in implementing such active-learning pedagogical strategies in their classrooms. Teachers and supervisors involved in the projects mentioned that using these methods helped their students to master the subject matter better, because they were engaged in discovery of knowledge (the cognitive dimension), as well as to feel less shy when working in small groups (the behavioral dimension). However, for teachers who were not involved in these projects, this was much less the case. While key personnel in the Government of Malawi and the teacher training colleges promoted the use of active-learning

pedagogies, at the time of the research they had not provided enough in-service guidance and support to teachers, who tend to revert to using teacher-centered methods.

In fact, the government put its primary focus on fostering active-learning at the pre-service level. The impact of pre-service teacher education is weakened because college tutors, who were not exposed generally to active-learning pedagogies during their training, may teach (often through lectures) about active-learning methods but did not model such pedagogies in their classrooms. Moreover, when teacher college students or graduates arrived at a school for practice teaching or to take up their first post, they typically encountered teachers using teacher-centered, transmission-oriented methods, making it challenging for them to try out and refine active-learning, student-centered methods.

Focus group participants also noted another obstacle to their using active-learning methods: the high-stakes examination system (e.g., at the end of Standard 8) that demands memorization of subject matter content rather than critical-thinking or problem-solving skills. Another factor inhibiting implementation of active-learning pedagogies, according to informants, was the limited availability of teaching and learning resources. Finally, teachers reported that salaries, accommodations, and other incentives encouraged them to devote the time and effort to implementing active-learning pedagogies.

### **Comparing Country Case Studies**

This section discusses the similarities and differences across the five case studies presented above. The discussion is organized around the key issues referenced in the previously-identified research questions:

- Reform Documents and Active-Learning Pedagogies
- Professional Development Initiatives and Active-Learning Pedagogies
- Teachers' Understandings and Behaviors Related to Active-Learning Pedagogies
- Factors that Constrain/Enable Implementation of Active-Learning Pedagogies

### **Reform Documents and Active-Learning Pedagogies**

In the five cases examined we witnessed in the first decade of the 21<sup>st</sup> century an explosion of policy document rhetoric as well as host government-USAID initiatives to promote active-learning pedagogies. We discovered attention to active-learning pedagogies in Egyptian government and USAID/Egypt documents beginning in the late 1970s and some initial pilot project efforts in the 1990s in the wake of the Jomtien World Conference on Education for All (EFA), but it was after the Dakar EFA meeting in 2000 that we observed

increased rhetoric and action. Similarly, we noted some attention to active-learning pedagogies in the 1990s in Kyrgyzstan, but government, USAID, and project documents highlighted such issues after 2000. In the cases of Cambodia, Jordan, and Malawi, we were only able to identify an explicit focus on active-learning pedagogies in government and related international agency documents in the new millennium.

Generally, the documents do not make explicit whether they are stressing the behavioral and/or the cognitive dimension of active-learning pedagogies. However, Cambodia and Jordan discuss such pedagogies in relation to preparing workers for the global economy and Malawi gives more attention to how such pedagogies can foster democratic citizens, while Egypt and Kyrgyzstan reference active-learning pedagogies as contributing to educating both citizens and workers.

### **Professional Development and Active-Learning Pedagogies**

In all five cases government initiatives and/or international organization-funded projects organized professional development activities to enhance teachers' knowledge, skills, and commitment to implement active-learning pedagogies. One dimension of such professional development common to all cases was the intent to employ such pedagogies in the workshops and other professional development activities. Also, in some of the approaches used in Cambodia, Egypt, and Jordan as well as most or all of the programs organized in Kyrgyzstan and Malawi, a refined cascade/TOT model was adopted. In addition, with the possible exceptions of Cambodia, this refined cascade/TOT model at times included some degree of parallel or joint capacity development programs for school administrators and supervisors as well as some form of supervised guidance of and support for teachers provided by other teachers, trainers, administrators, and/or supervisors. In Malawi, however, they were not able to effectively implement the interesting initiative in developing Mobile Teacher Training Troupes, composed of retired teachers and teaching experts.

Despite the consensus in the literature that such strategies for in-service professional development are preferred (see Leu, 2004; Schwille et al., 2007), at least in Egypt and Jordan, government and project trainers at times resorted direct training or simple TOT approaches. Interestingly, in these two countries the projects focused on institutional and individual capacity building at various levels of the in-service training system, while the PEAKS project in Kyrgyzstan built the capacity of government teacher trainers at the Kyrgyz Academy of Education and organized a few trainings for school inspectors. Such efforts were intended not only to develop teachers' capacity to employ active-learning pedagogies but also to

enable the system to deliver such professional development programs in the future.

### **Teachers' Understandings and Behaviors Related to Active-Learning Pedagogies**

Qualitative data from focus group interviews in all five countries reveal that teachers (as well as supervisors and administrators) involved in the above-referenced, project-facilitated professional development activities could articulate – with varying degrees of depth – the rationales and strategies of active-learning pedagogies. Teachers in Egypt, Kyrgyzstan, and Malawi emphasized the behavioral dimension (e.g. learning to take turns, express oneself, and listen during group work) and cognitive dimension (e.g., discovering knowledge, going beyond rote-learning and memorization) of such methods (a similar finding is reported in Namibia by Ralaingita, 2008). However, in Cambodia and Jordan, the focus was mainly on the behavioral dimension, expressed, respectively, in terms of “working in groups” or “playing games” and in terms of promoting learning “by doing” or “through play.”

In all five countries we obtained self reports that teachers involved in projects had made progress in implementing at least aspects of active learning pedagogies. Moreover, in all five countries reports by administrators, supervisors, and/or school-level steering committee members, based on their observations of teachers, reinforce the picture of pedagogical reform taking place. With the exceptions of Cambodia and Kyrgyzstan (where “non-focal project” informants were likely to be involved in other projects), there was less evidence of educators having enhanced their understandings and behaviors associated with active-learning pedagogies. Moreover, in the one case study that includes systematic classroom observation, Egypt, project-supported teachers' classroom interaction reflected modest movement over time toward implementing behavioral and well as cognitive dimensions of active-learning pedagogies, while this was less the case for teachers who were not involved in project activities.

### **Factors Enabling/Constraining Implementation of Active-Learning Pedagogies**

From the above discussion, it should be clear that professional development activities – particularly those organized with project support and that included training workshops as well as various forms of supervisory guidance and support – contributed to developing educators' understandings and behaviors related to active-learning pedagogies (see Leu, 2004, Schwille et al., 2007). The differences between educators involved in

project activities (whether the USAID-funded projects on which we focused or other projects) and those not participating speaks volumes in this respect. Focus group interviewees in all five countries also mentioned how such training activities and/or supervisory support helped them to begin using these methods. And non-project-involved teachers often pointed to the absence of such professional development initiatives in explaining why they knew little about and did not use such pedagogical approaches. In all cases, teachers mentioned how uninitiated or uncommitted administrators, supervisors, and – in the case of Malawi – college tutors might impede experimenting with such practices (a similar finding is reported in Namibia by Ralaingita, 2008).

Three policy domains also constrained implementation of active-learning pedagogies, even among those who benefited from project-supported professional development activities. First, interviewees in Egypt, Kyrgyzstan, and Malawi highlighted the challenge of employing these reform pedagogies in the context of high-stakes exams that privileged memorization over critical thinking and problem solving (see also Guthrie, 1990). That this was not a big issue in Jordan is likely because of the focus on kindergarten teachers, whose pupils do not face such exams in their immediate futures. Second, in Egypt, Jordan, Kyrgyzstan, and Malawi both teachers involved in projects and especially those not so involved mentioned conditions for teaching (e.g., size of classrooms, number of students, and availability of instructional materials) as affecting their ability to implement active-learning pedagogies (see also Guthrie, 1990; Ralaingita, 2008). Interestingly, in Kyrgyzstan teachers were divided between those for whom limited instructional materials was an encouragement and those for whom it was a discouragement to employ active-learning pedagogies. Third, educators in all five countries emphasized that, given the major commitment of time and energy to learn about active-learning pedagogies and then implement them on a regular basis, the limited incentives (e.g., increased salary, promotion prospects, or recognition) discouraged them from engaging in reform teaching methods.

## Conclusion

Schwille et al. (2007) observe that “evidence accumulated since the 1970s suggests that teaching is arguably the strongest school-level determinant of student achievement. However, there is still much debate on what it takes to produce excellence among teachers at large.” While the details of what constitutes excellent teaching are subject to debate, there seems to be a growing consensus that it involves some notion of active-learning pedagogies. Certainly, as we have discussed above, the scholarly literature as well as the policy documents of international organizations and national government have

increasingly championed student-centered, active-learning pedagogies as a key element in improving the quality of education.

Nevertheless, efforts to get more teachers to use more routinely such instructional methods have faced many challenges. In part, this reflects the reality of any change in any patterns of human behavior, in that teachers are not blank slates on whom reformers can inscribe the new pedagogical approaches:

In fact, many teachers are more influenced in teaching by how they themselves were taught in elementary and secondary school than by their formal [pre-service and in-service] teacher education. In other words, a teacher who has been taught throughout elementary and secondary school by respected teachers who used a direct transition mode of delivery and very little student-centred inquiry is likely to identify with that mode of teaching and be deeply resistant to superficial attempts to change. (Schwille et al., 2007)

In the five case studies summarized above, though, we see evidence that professional development initiatives, mainly in-service, can promote among teachers not only different ways of talking but also different ways of behaving and interacting in classrooms (similar findings in Russian and South Africa are reported by Schweisfurth, 2002). While it would be an overstatement to say that teachers involved in projects radically transformed their instructional practices, it seems appropriate to conclude that real changes occurred as a result of sustained training and supervisory support.

This is the good news. Nonetheless, we need to remember that such professional development activities and the attendant shifts in teacher pedagogical approach were observed mainly in international organization project-supported contexts. That trainers, supervisors, and teachers from these countries could effect pedagogical change with technical assistance and financial support is promising, but raises the question of how such successes can be deepened, diffused, and sustained over time (especially given teachers’ desire for incentives to attend workshops, etc.). An affirmative answer to this question seems to depend at least in part on the extent to which projects build the capacity and activate the system to develop, motivate, and support teachers and not just transmit knowledge and skills to teachers. While financial resources are certainly not insignificant, the ways such resources are mobilized and distributed are also important.

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## REFERENCES

- Abd-El-Khalick F (2005). Educational Quality Baseline Study [SCOPE I]. Cairo: Education Reform Program.
- Abd-El-Khalick F (2006). Educational Quality Baseline Study: SCOPE II Data Analysis Report. Cairo: Education Reform Program.
- Abd-El-Khalick F (2007). Educational Quality Baseline Study: SCOPE III Data Analysis Report. Cairo: Education Reform Program. provide page
- Alexander, Robin (2001). *Culture and Pedagogy: International Comparisons in Primary Education*. Oxford: Blackwell.
- Alexander R (2006). *Towards Dialogic Teaching: Rethinking Classroom Talk*, 3rd edition. New York: Dialogos.
- Alexander R (2008, April). *Education for All, the Quality Imperative, and the Problem of Pedagogy*. Create Pathways to Access Monograph No. 20. London: University of London Institute of Education.
- de Baessa Y, Chesterfield R, Ramos T (2002). *Active Learning and Democratic Behavior in Guatemalan Rural Schools*. *Compare* 32 (2): 205-18.
- Barnes D, Todd F (1995). *Communication and Learning Revisited*. London: Heinemann.
- Barrow K, Boyle H, Ginsburg M, Leu, E, Pier D, Price-Rom A (2007). *Cross-National Synthesis of Educational Quality Report No. 3: Professional Development and Implementing Active-Learning, Student-Centered Pedagogies*. Washington, DC: EQUIP1 Research Report. Available at: <http://www.equip123.net/publications>.
- Beeby C (1966). *The Quality of Education in Developing Countries*. Cambridge, MA: Harvard University Press.
- Beeby C (1986). "The Stages of Growth in Educational Systems" In Stephen Heyneman and Daphne White (eds.) *The Quality of Education and Economic Development: A World Bank Symposium* Washington, DC: World Bank. pp. 37-44.
- Boyle H (2006). *Memorization and Learning in Islamic Schools*. *Comp. Educ. Rev.* 50 (3): 478-95.
- Bunlay N, Wright W, Sophea H, Bredenburg, Singh M (2009). *Active-Learning Pedagogies as a Reform Initiative: The Case of Cambodia*. EQUIP1 Research Report. Washington, DC: American Institute for Research. <http://www.equip123.net/docs>.
- Chickering AW, Gamson ZF. March 1987 *Seven Principles for Good Practice*. AAHE Bull. 39 3-7.
- Cuban L (1984). *How Teachers Taught: Constancy and Change in American Classrooms, 1898-1980*. New York: Longman.
- Dewey J (1916). *Democracy and Education*. New York: Free Press.
- Dewey J. (1938). *Experience and Education*. New York: Macmillan.
- Edwards A, Westgate D (1994). *Investigating Classroom Talk*. London: Falmer.
- Ginsburg M (2006). *Challenges to Promoting Active-Learning, Student-Centered Pedagogies*. EQUIP1 Issue Paper. Washington, DC: American Institute for Research. <http://www.equip123.net/docs/E1-IP-ChallengesPromotingActiveLearning.pdf>.
- Günther S (2006). *Be Masters in that You Teach and Continue to Learn: Medieval Muslim Thinkers on Educational Theory*. *Comp. Educ. Rev.* 50(3): 367-388.
- Guthrie G (1990). *To the Defense of Traditional Teaching in Lesser-Developed Countries*. In Val Rust and Per Dalin (eds.) *Teachers and Teaching in the Developing World*, New York: Garland Publishing. pp. 219-32.
- Heyneman S (1986). *Overview*. In Stephen Heyneman and Daphne White (eds.) *The Quality of Education and Economic Development: A World Bank Symposium* Washington, DC: World Bank. pp. 3-4.
- Inter-Agency Commission (1990) *World Declaration on Education for All*. (Document adopted by the World Conference on Education for All: Meeting Basic Learning Needs, Jomtien, Thailand, 5-9 March, 1990). New York: Inter-Agency Commission.
- Lockheed M Levin H (1991). *Creating Effective Schools*. In H. Levin and M. Lockheed (eds.) *Effective Schools in Developing Countries*. Washington, DC: The World Bank, Education and Employment Division, Population and Human Resources Department. pp. 1-20
- Leu E (2004). *The Patterns and Purposes of School-Based and Cluster Teacher Professional Development Programs (EQUIP1 Working Paper No. 2)*. Washington, DC: USAID.
- Leu E, Price-Rom A (2006) *Quality of Education and Teacher Learning: A Review of the Literature*. Washington, DC: USAID Educational Quality Improvement Project 1.
- Mayer R (2004). *Should there be a three-strikes rule against pure discovery learning? The case for guided methods of instruction*. *Am. Psychol.* 59 (1):14-19.
- Megahed N, Ginsburg M (2008). *Education Program Support in the Area of Professional Development: Documentation Research*. Cairo, Egypt: Education Reform Program.
- Megahed N, Ginsburg M, Abdellah A, Zohry A (2008). *Active-Learning Pedagogies as a Reform Initiative: The Case of Egypt*. EQUIP1 Research Report. Washington, DC: American Institute for Research. <http://www.equip123.net/docs>.
- Mercer N (2000) *Words and Minds: How We Use Language to Think Together*. London: Routledge.
- Ministry of Education, Youth and Sport (MEYS) (2007). *Child Friendly School Policy*. Phnom Penh, Cambodia: MEYS.
- Mizrachi A, Padilla O, Susuwele-Banda W (2008). *Active-Learning Pedagogies as a Reform Initiative: The Case of Malawi*. Washington, DC: American Institute for Research. <http://www.equip123.net/docs>.
- Moyles J, Hargeaves L, Merry R, Paterson F, Esarte-Sarries V (2003). *Interactive Teaching in the Primary School*. Maidenhead: Open University Press.
- Nonoyama-Tarumi Y, Bredenberg K (2009). *Impact of school readiness program interventions on children's learning in Cambodia*. *Int. J. Educ. Dev.* 29:39-45.
- Nystrand M, Gamoran A, Kachur R, Prendergast C (1997) *Opening Dialogue: Understanding the Dynamics of Language and Learning in the English Classroom*. New York: Teachers College Press.
- Piaget J (1969). *Science of Education and the Psychology of the Child*. London: Longman.
- Price-Rom A, Sainazarov K (2009). *Active-Learning Pedagogies as a Reform Initiative: The Case of Kyrgyzstan*. Washington, DC: American Institute for Research. <http://www.equip123.net/docs>.
- Program for International Student Assessment (PISA) (2007). *Science Competency for Tomorrow's World*. Paris: OECD. (<http://www.pisa.no/pdf/Chapter1and11PISA2006.pdf>).
- Ralaingita W (2008). *Re-Making the Namibian Teacher: A Study of Teacher Reflection in an Era of Social Transition and Policy Reform*. Unpublished doctoral dissertation, School of Education, University of Maryland.
- Rogers C (1969). *Freedom to Learn*. Columbus, OH: Charles Merrill.
- Roggemann K Shukri M (2009). *Active-Learning Pedagogies as a Reform Initiative: The Case of Jordan*. Washington, DC: American Institute for Research. <http://www.equip123.net/docs>.
- Schweisfurth M (2002). *Teachers, Democratization and Educational Reform in Russia and South Africa*. Oxford: Symposium Books.
- Schulle J, Dembélé M, Schubert J (2007). *Global Perspectives on Teacher Learning: Improving Policy and Practice*. Paris: UNESCO, International Institute for Educational Planning. Pp.1-140
- Smith F, Hardman F, Wall K Mroz M (2004). *Interactive Whole Class Teaching in the National Literacy and Numeracy Strategies*. *Brit. Educ. Res. J.* 30 (3): 395-412.
- Spring J (2006). *Pedagogies of Globalization: The Rise of the Educational Security State*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Tek V (2008). *Barriers to implementing Child-Friendly School program in Svay Rieng Province*. Unpublished Master's Thesis, Royal University of Phnom Penh, Cambodia.
- Torney-Purta J (1999). *Civic Knowledge and Engagement among 14-year-olds in 23 European Countries, 2 Latin American Countries, Hong Kong, Australia and the United States*. Hamburg, Germany: IEA Data Processing and Research Center.
- United Nations (1989). *Convention on the Rights of the Child*. Adopted and opened for signature, ratification and accession by General Assembly resolution 44/25 of 20 November. Geneva: Office of the High Commissioner for Human Rights.

- UNESCO. (2000). The Dakar Framework for Action: Education for All: Meeting Our Collective Commitments. Text adopted by the World Education Forum Dakar, Senegal, 26-28 April.
- UNESCO (2004). Education for All: The Quality Imperative. (EFA Global Monitoring Report 2005). Geneva: UNESCO.
- UNESCO (2008). EFA Global Monitoring Report, 2008: Education for All by 2015. Will We Make It? Oxford: Oxford University Press and UNESCO Publishing.
- UNICEF (2006). Monitoring Learning Achievements (4<sup>th</sup> Grade). Bishkek: Ministry of Education, Science and Youth Policy of the Kyrgyz Republic.
- USAID (2005, April). Education Strategy: Improving Lives through Learning. Washington, DC: USAID.
- van Graan M, Leu E, Price-Rom A, Barrow K (2006). Namibia pilot study of teacher professional development: Quality in education, teaching, and learning: Perceptions and practice. Washington, DC: USAID Educational Quality Improvement Project 1.
- Vygotsky, L (1962). Mind and Society. Cambridge, MA: MIT Press.
- Wikipedia (2008). "Constructivism (Learning Theory)." Retrieved 4 April from [http://en.wikipedia.org/wiki/Constructivism\\_\(learning\\_theory\)](http://en.wikipedia.org/wiki/Constructivism_(learning_theory)).
- Wittrock M (1979). The Cognitive Movement in Instruction. *Educ. Res.* 8 (2):5-11.
- Watkins D (2007). "Comparing Ways of Learning" in Mark Bray, Bob Adamson, and Mark Mason (eds.) *Comparative Education Research: Approaches and Methods*. Hong Kong: Comparative Education Research Centre and Springer. pp. 299-313