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Bridging Culture, Research, and Practice in Early Childhood Development: The Madrasa Resource Centers in East Africa

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ABSTRACT—*The Madrasa Resource Centers in East Africa have adapted features of Euro-American theory and practice into a service delivery system responding to local cultural and socioeconomic realities. After 25 years of implementation in predominantly Muslim communities with high poverty and low literacy rates, the program could serve as a model for other parts of the continent with similar population profiles. This article examines some of the program's key features and discusses the prospects that the program's integration of research into service delivery holds for developmental research in the region. It proposes that university partnerships with such programs could yield productive inquiry with benefits to local universities, community-based programs, and developmental science.*

KEYWORDS—*early childhood development; early childhood education; Madrasa preschools; applied developmental research; university–community partnerships; East Africa*

Several forces have converged to increase the prominence of early childhood development/education (ECD/E) programs in

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Africa. Dramatic sociocultural change is altering traditional patterns of child care (Njenga & Kabiru, 2001). Subsistence economies are losing viability, mobility and settlement patterns are reducing the role of extended family members in child care, and enhanced schooling opportunities for children have diminished older siblings' involvement in traditional socially distributed child-care systems (see Kipkorir, 1993). Alternative arrangements for child care have become necessary, and communities are increasingly looking to preschools as a realistic option. With schooling perceived broadly as the ultimate panacea for socioeconomic problems facing families and communities, preschool programs have gained importance in their own right; even among poor and uneducated families, there is growing conviction that children exposed to such programs have a better chance at succeeding in school.

In East Africa (Kenya, Tanzania, and Uganda), governments have long recognized the importance of ECD/E for later school success, although programs have largely been funded not by governments but by local nongovernmental organizations and international philanthropic agencies. Across all three countries, preschool centers are mostly owned and managed by communities. In recent decades, ECD/E programs have received an additional boost from international agencies—especially UNESCO, UNICEF, and the World Bank—promoting these programs as a necessary part of the broader strategy for national development and poverty reduction (van der Gaag, 2002; UNESCO, 2000, 2007; Young & Mustard, 2008).

Under the foregoing influences, East Africa has witnessed tremendous growth of ECD/E programs during the past three decades, although gross enrollment ratios (GER)—the number of enrolled children as a percentage of all similar-age children—remain low. The latest Education for All report shows that as of 2007, the GERs for the three countries stood at 48% for Kenya, 35% for the Republic of Tanzania, and 4% for Uganda—with boys and girls similarly represented (UNESCO,

2010). The expansion in programs has not been matched with commensurate attention to quality beyond the formulation of national policies focusing predominantly on personnel and physical environment standards (Republic of Kenya, 2006a, 2006b; Republic of Uganda, 2007; Revolutionary Government of Zanzibar, 2005). Neither have there been systematic efforts to assess these programs with regard to their processes and outcomes.

Amid widespread concern that the rapid expansion in ECD/E services is driven by Euro-American program models and practices presented as universal standards of *best practice* (Pence, this issue), the imperative for systematic inquiry into all aspects of ECD/E interventions cannot be overstated. However, the expertise and resources needed to support such inquiry are extremely limited throughout the continent. Using the ECD/E program of the Madrasa Resource Centers (MRC) as a prism, this article explores the potential contributions that an analysis of the mission, structure, and operations of a comprehensive cross-national, multisite community-based program could make to applied developmental research on the continent. It also explores the adaptation and integration of a North American curricular/pedagogical framework into a locally responsive service delivery system, its attainment of an appreciably high level of program sustainability and local ownership within resource-poor communities, and its strong valuing of research.

THE MRC ECD/E PROGRAM

Currently, MRC supports at least 203 communities: 66 in Kenya, 53 in Uganda, and 84 on Zanzibar Island, Tanzania. The program has benefited some 30,000 children and trained over 4,000 community-based teachers and 2,000 school-management committee members across the region. At the 2007 commemoration of the program's 25th anniversary, His Highness the Aga Khan described the program as "a story that began with the sowing of some very small but well selected seeds . . . seeds which took root and now have blossomed into an educational success story which can serve as an inspiring example to educators everywhere" (http://www.akdn.org/Content/211). In this section, we briefly summarize some of the key components of the program, including its history.

Historical and Sociocultural Context
The MRC program began initially as a small pilot project on Kenya's coastal region in the mid-1980s with Aga Khan Foundation funding. It became a regional initiative when programs were also established in Zanzibar (Tanzania) and Uganda in 1990 and 1993, respectively. It evolved in response to a concern in Muslim communities that appropriate and high-quality education programs were not readily available to their children. Access to local schools was inadequate, and children who were fortunate to gain admission performed poorly. These economically disadvantaged communities with large families and high adult illiteracy rates (Zimmerman, 2004) perceived the national secular educa-

tion system as unidimensional and incomplete, focusing exclusively on academic skills to the exclusion of education in the moral and spiritual values that defined the cultural and religious outlook of Muslims. Conversely, traditional Islamic education, which was well accepted in the Islamic population, was perceived to be limited because its singular focus on religious values shortchanged children on the critical skills and competencies needed for survival and success in the secular world. In Kenya, this concern had been underscored decades earlier by the Education Commission Report, popularly known as the Ominde Report (Ominde, 1964, pp. 34–36):

> Whereas education that has spread elsewhere in Kenya under Christian auspices has assumed a secular form, Islamic education is wholly centered in Islam as a religion and as a social and cultural system. . . . The need for secular education was clearly recognized, as was also the danger that a neglect of it would increasingly place Muslims at a disadvantage in meeting the demands of a modern world.

Muslim communities saw the need to have their children well grounded in their faith and local culture while also gaining skills necessary to enter and do well in secular schools. To them, ECD/E was a critical starting point for bridging religiocultural socialization and secular education. Thus, MRC is deeply rooted in practical historical and sociocultural realities within the communities that came to embrace, support, and own it.

Program Expansion: Community Entry and Participation
MRC program operations begin with the identification of communities in need of ECD/E services. Community entry is done through community and religious leaders. The number of children with no access to preschool and the community's willingness to participate are important criteria for establishing a program. Following selection, community mobilization activities are initiated to (a) raise awareness about existing education problems, (b) sensitize the population to the importance of ECD, and (c) position the community to assume collective responsibility for solving identified problems. In so doing, the program promotes self-reliance and active involvement in local capacity-building.

Once agreement has been reached to establish a center, the community's investment and involvement are evident in all aspects of the program. The community identifies or donates land to build a new facility or renovates an existing structure. Under an MRC community-development officer's guidance, community leaders then mobilize people and resources to ensure that the center will provide high-quality developmental and preschool experiences for children. Teachers are identified within the community by the community members themselves and trained by MRC trainers.

Program evaluation, a core element of MRC's service delivery, is a joint venture between community members and MRC staff. For the first 2 years, the preschools are evaluated biannually by the community members and the MRC staff independently; the

MRC staff and the community's representatives then come together to discuss their findings. This participatory process is intended to build community-level evaluation capacity, sensitize communities to quality issues, and inculcate a sense of ownership for sustainability. At the end of 2 years, the preschools are assessed by the national MRC board, and then by a panel of external experts, including Ministry of Education officials. Once a preschool meets the required quality standards, it is allowed to join the Madrasa Graduated Preschools Association, which takes over the monitoring and evaluation function with occasional support from MRC staff.

Curriculum and Pedagogy

The MRC program addresses goals relating not only to learning but also to health and nutrition, growth monitoring, and parenting education. The program serves all children, including those with special needs and HIV/AIDS, and aims to facilitate the transition from home to preschool and, subsequently, primary school. The program borrows its pedagogical principles and practices from the HighScope preschool model (Hohmann & Weikart, 1995), which is grounded in two traditions: the Piagetian cognitive developmental view of learning as "a process in which the child acts on and interacts with the immediate world to construct an increasingly elaborate concept of reality" (Hohmann & Weikart, 1995, p. 16), and the Deweyan progressivist view of learning as a "change in patterns of thinking brought about by experiential problem-solving" (Kohlberg & Mayer, 1972) in the context of natural interactions with people and the environment (Hohmann & Weikart, 1995). Thus, the MRC's pedagogical foundation is the constructivist philosophy of valuing children as active agents of their own learning and discovery (Piaget, 1970) within a sociocultural milieu (Vygotsky, 1978). This is a profound departure from the pedagogy of recitation and memorization characteristic of religious education in traditional Madrasas.

Adopting HighScope's five ingredients of active learning, the MRC program provides an abundance of age-appropriate *materials* for children to use in a variety of ways, along with opportunities for children to *manipulate* materials, *choose* activities and materials in line with personal interests, and use *language*—all with appropriate adult *support*. The acronym coined at MRC to capture the centrality of these active learning ingredients is MAMACHOLASU (*MA*: material; *MA*: manipulation; *CHO*: choice; *LA*: language; and *SU*: support; Madrasa Resource Centre, 2000). Throughout the schoolday, children have opportunities to interact with culturally appropriate materials, with the teacher's main role being one of observing and asking appropriate questions to identify the developmental level of the child in order to guide further exploration and discovery.

In the context of the raging debate on the importation of Western practices, it is instructive to note that although *constructivism* and *active learning* are formal conceptualizations in Western educational theory, the forms of learning and instructional philosophies inherent in them are not uniquely Western. Rogoff and her colleagues have identified attending, observing, imitating, creating, participating, and coconstructing as natural, participatory learning mechanisms through which children from all cultures come to gain knowledge of their world long before their exposure to the didactic, assembly-line instruction found in schools (Rogoff, Paradise, Arauz, Correa-Chavez, & Angelillo, 2003). In a conceptual analysis of young children's play in African cultures, Marfo and Biersteker (2011) have argued that careful examination of early developmental and learning processes in African contexts reveals pedagogical insights and principles that are very much compatible with constructivist, discovery, activity-based, or problem-based learning, as conceptualized in Euro-American contexts. The curricular and pedagogical adaptations at MRC have not necessarily arisen out of formalized guidelines on cultural/contextual relevance; nevertheless, MRC employs instructional methods that build on local approaches to teaching children, including the use of interactions around stories, songs, and concrete as well as imaginary play objects and activities to stimulate thinking and exploration.

Grounding Program Operations and Curricular Practices in the Local Context

National standards guiding the operation of preschools vary across the region. However, MRC centers in all three countries use a standard curriculum with sufficient flexibility to permit local conditions to dictate the selection of instructional materials and the nature of supports elicited or received from the community. The program uses teaching aids and learning materials constructed from low-cost materials readily available within the community. Children, teachers, parents, and the community at large all participate in collecting safe materials for development into useful teaching and learning aids, and parents are encouraged to collaborate with teachers to develop such materials.

MRC's holistic approach to curriculum content and instructional delivery revolves around three kinds of "integration." First, by virtue of the sociocultural values and circumstances that gave birth to the program, the curriculum content integrates secular academic education and Islamic religious education. Second, the two types of content are taught not in isolation from each other but as an integrated whole; lessons are planned around themes fusing instruction in secular academic skills and religious values. Third, the program integrates skills and competencies across all dimensions of child development, along with educational activities for parents and the community emphasizing childrearing skills, including healthy nutrition care and hygiene practices, as well as knowledge that facilitates parents' ability to complement the program's instructional efforts.

MRC RESEARCH ON PROGRAM PROCESSES AND OUTCOMES

Even in resource-rich regions, such as North America, it is unusual for community-based programs to have in-house research

units. It is significant, therefore, that the MRC program has a research division headed by a lead researcher with formal training in research methodology and statistical analysis. This feature of MRC's organizational structure underscores the program's commitment to using research to continually inform practice and policy within and outside the program. The Regional Research Program was inaugurated in 1998 "to undertake studies and create systems that would assist in the identification of gaps, as well as provide information that would help in the decision-making process at all levels" (Zimmerman, 2004, p. 95). That mandate now includes "assessment of preschools, the study of context and features of program effectiveness, and the development of the capacity of staff to undertake monitoring and evaluation" (p. 95).

To illustrate the promise that MRC's research program holds for the ECD/E field on the continent, we consider two specific research projects. The first utilized qualitative methodology "to identify and describe the content, contexts, and processes that go into the creation of projects that enable children and their families to achieve better lives" (Zimmerman, 2004, p. 98). The extensive report on the first project, published by the Bernard van Leer Foundation (Zimmerman, 2004), reveals a meticulous and creative use of culturally sensitive tools and protocols to obtain evaluative feedback in communities with relatively low educational attainment. For example, interviewers used the metaphor of *the African dish* (as entailing ingredients/inputs, the cooking process, the finished dish, and those who partake in the dish) to prime respondents to think about a program as having multiple components. Similarly, the *tree in a shamba* (*garden*) metaphor was used to prime respondents to think about the program as a tree (its roots, branches, leaves, and fruit being analogous to components of the program) and to consider what might go poorly or well to cause the program to produce positive or negative outcomes. Using such ecologically appropriate protocols, qualitative interviews were conducted in 24 centers (8 from each country) with seven participants from each center: two children, two parents, a teacher, a school-management committee member, and a community member. From the analysis of these interviews, 10 conditions deemed to contribute to effectiveness and sustainability were extracted to guide future quality improvement decisions and policies (Zimmerman, 2004).

The second project employed a quasi-experimental design to assess short-term program impact on cognitive outcomes (Mwaura, Sylva, & Malmberg, 2008). The design included 8 MRC and 8 non-MRC centers from each of the three countries (total of 48 centers, less one dropout). Each pair of MRC and non-MRC centers was chosen from the same community, with a minimum of 1–3 km between them. Centers had to have been nonprofit and in operation for at least 2 years at the time of pretesting to be included. Within each school, one classroom was selected from which 10 to 17 children were randomly drawn into the sample. A nonpreschool control group included at least

10 children from the communities surrounding each selected center (see Mwaura et al., 2008, for other methodological details).

Reflecting the dearth of locally developed instruments, the cognitive measures used in the study were based on selected subscales from the British Ability Scales II—Early Years (BAS II; Elliot, Smith, & McCulloch, 1996) and the African Child Intelligence Test (ACIT; Drenth et al., 1980) adapted from a Dutch instrument (Bleichrodt, Drenth, Zaal, & Resing, 1984). The BAS II scales measured verbal comprehension, recognition of picture similarities, number concepts, and block building, whereas the ACIT scales measured class principle/concept, visual cognition, and verbal comprehension. The analyses reported by Mwaura et al. (2008) were based on 423 children for whom both pretest and posttest data were available (Zanzibar, 45%; Kenya, 33%; Uganda, 22%).

The study's findings are consistent with what has been typically reported in North America. First, even after controlling for child and family characteristics at pretest, preschool programs (MRC and non-MRC alike) had a significant positive influence on cognitive outcomes; gains from pretest to posttest were significantly larger for children from the two preschool conditions than they were for nonpreschool control children. Second, cognitive gains were stronger for the MRC children than they were for non-MRC children. Classroom learning environment data from another study (Malmberg, Mwaura, & Sylva, 2011) may help to explain the difference in cognitive outcomes for MRC and non-MRC children. Using an adaptation of the Early Childhood Environment Rating Scale (Sylva, Siraj-Blatchford, & Taggart, 2003), the study found a higher quality learning environment in MRC centers.

Although the MRC's research unit is young, and the scope of its outcomes research needs to expand substantially beyond the cognitive and academic domains, it is a model worth considering as developmental intervention programs emerge across the continent. In the next section, we explore research challenges on the continent and share a few thoughts on ways forward.

ECD/E PROGRAMS AND APPLIED DEVELOPMENTAL RESEARCH IN AFRICA: CHALLENGES AND PROSPECTS

Twenty-five years ago—amid growing international attention to early childhood developmental interventions in developing nations—Wagner (1986) observed that unless research specialists are involved very early in the planning of such programs, substantial investments may be lost. Considering the combined activities of the World Bank, UNICEF, UNESCO, and major international philanthropic agencies—among them the Bernard van Leer Foundation, the Aga Khan Foundation, and Save the Children—it is safe to contend that significantly more investments are being made in ECD/E in developing countries today than has been the case in the past. Wagner's caution is therefore still relevant, but attaining the ideal state of greater involvement

of local research expertise in program planning remains elusive on the continent.

Much of what informs programs in Africa continues to come predominantly from Euro-American research (e.g., Hyde & Kabiru, 2003; Nsamenang, 2008; Pence & Hix-Small, 2009). Indeed, in establishing the rationale for investments in ECD/E in developing countries, advocates frequently cite American research as if there were no constraints to the extrapolation of findings across societies with different cultural values and socio-economic fortunes. Regrettably, there is limited research expertise on the continent to take advantage of what we know from the West to launch programs that appropriately reflect local needs and circumstances. Where research expertise exists, it is undercut by numerous challenges, including limited access to current literature on advances in the field locally and abroad. University libraries are underresourced and inaccessible to community-based ECD/E research professionals. The advent of electronic literature databases promises to ameliorate this problem; however, access to such databases requires internet connectivity, which is not readily available to large numbers of research professionals. Even when connectivity is not a problem, obtaining literature from electronic sources can be extremely expensive, and many universities either lack the resources to acquire access to databases or do not give adequate priority to them in their budgetary planning.

The need for research capacity building on the continent is thus clear, and we devote this final section to a selective discussion of some practical steps toward that end. We begin with the critical role that African universities can play. The proliferation of ECD/E programs across the continent presents unprecedented opportunities for creativity in contemplating programs of inquiry to generate knowledge that is directly pertinent to the African context. One way to harness these opportunities, despite the enormous resource challenges facing the continent, is for African universities to build university–community partnerships that simultaneously advance the academy's research mission and support community-based programs in their efforts to deliver high-quality services. Such partnerships have the prospect not only of promoting better engagement between universities and their various publics but also of building research capacity in related disciplines and fields. As potential vehicles for undergraduate and graduate research training, these partnerships could be institutionalized as part of a university's curriculum for preparing future researchers. In turn, community-based programs will benefit by tapping into the expertise of research faculty to undertake research that is likely to contribute to program enhancements.

To illustrate how some research challenges can be addressed in the context of such partnerships, consider the pervasive problem regarding measurement tools. Research with local relevance is severely hampered by excessive dependence on imported instruments, often adopted with little or no adaptations. The MRC's program impact research summarized above is a case in point. The study's instruments were not selected because they were the most appropriate for the context but because they were

a convenient "next best choice" in the absence of locally validated tools. Collaborative research partnerships in which university faculty and their research assistants are actively involved in the design of ecologically valid instruments for a broad range of developmental and learning outcomes could (a) reduce dependence on foreign instruments, and (b) expand the scope of outcome assessments beyond the academic and cognitive domains. Regarding the latter, it is important that programs pay attention to culturally defined measures of social competence, social intelligence, and general astuteness in out-of-school contexts. Ample conceptual and empirical work exists on some of these constructs (Serpell, this issue; Super, Harkness, Barry, & Zeitlin, this issue) to provide guidance on instrument design.

Beyond what individual universities can do, there are also ways for the higher education establishment at large to cultivate and/or better harness institutional synergies for research capacity development. For example, as noted in the introduction to this Special Section (Marfo, Pence, LeVine, & LeVine, this issue), the Association of African Universities (AAU) has made research capacity-building one of its top priorities. The challenge lies in finding the appropriate mechanisms and the resources to attain this goal. One reasonable approach may lie in small steps that are not overly costly, especially those that take advantage of existing, but largely uncoordinated, efforts. In the child development field, regional workshops sponsored by the International Association for Cross-Cultural Psychology, the International Society for the Study of Behavioral Development, and the International Union of Psychological Sciences are contributing in significant ways to regional research capacity building (Marfo et al., this issue). If the AAU were to cultivate collaborative partnerships with similarly responsive international research organizations, the multiplier effects on research capacity across disciplines could be quite substantial.

Additionally, international organizations and donor agencies would be contributing significantly to the development of research expertise on the continent if they drew more local professionals into their country-level contractual research programs. The prototypical practice within the donor community is one in which donor-funded research projects are routinely contracted out to itinerant expatriate researchers. With a little bit of creativity, these research contracts could be structured deliberately to contribute to research capacity-building. Advocacy for movement in this direction has to come from the continent's universities and professional research organizations.

CONCLUSION

A cross-national multisite program delivered within local communities under the auspices of one agency is quite rare and even rarer when it integrates research. The MRC program should thus be of interest to those engaged in research capacity building in Africa. In addition to serving as a model for comparable populations in other parts of Africa, MRC is positioned to spawn

applied research with local and global implications. However, such lofty expectations are perhaps unrealistic for an agency with limited financial and personnel resources. Our suggestion that MRC is the ideal "material" out of which productive university–community partnerships are made deserves close consideration by universities across the region. With the high-profile attention that ECD/E enjoys in the international donor world, universities exercising leadership in partnering with programs like MRC might succeed in obtaining funding from international sources to build collaborative research programs that will help fulfill the community-engagement mission of the African academy and simultaneously advance scientific knowledge with policy and practice benefits.

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