Case Study of Madrasa Early Childhood Development Centers:
Curriculum, Teacher Training, Community Engagement and 21st Century Skills

Renu Bagaria
Hanna Otani
Sarina Rosenthal

Harvard Graduate School of Education
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Introduction

Early Childhood Education is increasingly recognized as an imperative site for learning to prepare children for future academics and individual development. The Aga Khan Madrasa Early Childhood Development (ECD) Centers are recognized as a strong model of addressing the needs of underprivileged students, through community-based and culturally-relevant learning. The Aga Khan Foundation (AKF) is a private, non-denominational development agency that gives grants to mostly grassroots organizations testing innovative approaches to problems facing their communities (AKDN, 2008). The Madrasa schools, a grantee program of AKF, were first created as a child-centered program for underprivileged Muslim communities in Kenya in 1986 (Malmberg, Mwaura & Silva, 2010). His Highness Aga Khan responded to the poor muslim community’s concern that their children were marginalized because of the limited access to primary education (AKDN, 2008). As of 2011, the program supports approximately 203 communities: 66 in Kenya, 53 in Uganda, and 84 in Tanzania; 30,000 children have benefited; 4,000 community teachers and 2,000 school management committee members have been trained (Mwaura & Marfo, 2011). Madrasa ECD started as a program for Muslim children of 3-6 years of age to receive education based on their faith and local culture while gaining skills needed to enter primary schooling, and has since expanded to non-Muslim children in the past years (Mwaura & Marfo, 2011). What sets Madrasa ECD programs apart is how it is a community-based early childhood development program, which underlines community ownership and sustainability, with an emphasis on child-centered and holistic learning. Research and student experiences have shown that students obtain not only knowledge necessary for school readiness such as literacy and mathematics, but also skills for social and emotional development.
In this case study, we will explore the ways in which the Madrasa Schools employ Pellegrino and Hilton’s (2012) framework of 21st century competencies--cognitive, intrapersonal, and interpersonal skills-- to achieve their goals of improving access and school readiness among early childhood students. While Madrasa schools do not explicitly set out to teach 21st century skills, we will illustrate how the curriculum, teacher training programs, and parent/community engagement programs integrate 21st century competencies in order to provide effective early childhood education. We will conclude with recommendations on how the programs can address their limitations through a summative evaluation of existing programs, in order to identify the next steps necessary for promoting even more effective Madrasa ECD programs.

### 21st Century Skills

Pellegrino and Hilton (2012) designed a framework to organize 21st century skills. They have divided these 21st century skills in three domains of competence: cognitive, intrapersonal, and interpersonal. These skills are necessary to face the “economic, environmental, and social challenges” (p.14). Cognitive competencies include cognitive processes and strategies, knowledge, and creativity. Within this competency, the following descriptive cognitive skills are pertinent to our case study: critical thinking, problem solving, analysis, information literacy, oral and written communication, and innovation. Intrapersonal competencies embrace intellectual openness, work ethic/conscientiousness and positive core self-evaluation. Specifically, these skills include flexibility, adaptability, artistic and cultural appreciation, responsibility, perseverance, self-reinforcement, self-direction, physical and psychological health. Interpersonal competencies are composed of teamwork/collaboration and leadership. This competency encompasses communication, collaboration, negotiation, and self-presentation. In this paper, we
will reflect upon how the Aga Khan ECD Centers have enhanced cognitive, intrapersonal, and interpersonal competencies for students, teachers, and parents/community.

**Madrasa Resource Center: Curriculum**

In this section, we will first explain how the objectives and theory behind the curriculum were developed to correct a deficit in existing ECD programs through a child-centered model for the holistic development of students. Then, we will show how the existing curriculum model promotes cognitive, interpersonal, and intrapersonal competencies for children. To represent the implementation of the curriculum, we will show how students engage with the curriculum and holistic learning environment to build upon those competencies. Finally, we will discuss the effect of such curricula on student advancements in academic and personal development.

**Curriculum Objectives**

The Madrasa Resource Center (MRC) Early Childhood Program developed a holistic curriculum that emphasizes child-friendly learning and intertwines Muslim and Secular values and competencies. In designing this ECD framework, the MRC recognized deficits in other ECD programs that were strictly secular or strictly religious. Mwaura and Marfo (2011) argue that these separate programs were too narrowly focused in their curricula, and failed to provide students with necessary critical thinking skills. In order to achieve their goal of providing access and quality education to underprivileged Muslim and other disadvantaged students the MRC actively planned a curriculum that integrates secular and Islamic education in content and pedagogy, integrates skills from all levels of child development, and emphasizes the need to develop cognitive, interpersonal, and intrapersonal skills (Mwaura & Marfo, 2011). Furthermore, the MRC has a standard curriculum across the three countries in which programs are implemented, yet allows flexibility to create instructional materials that are culturally appropriate.
in different local settings (Mwaura & Marfo, 2011). The MRC curriculum aims to enhance “full development of the child within traditional, cultural and religious values of the family and the community” (AKDN, 2008, p.20), by emphasizing the need to develop multiple competencies and embrace cultural differences in variable learning environments, which were overlooked in alternative ECD programs.

The MRC curriculum was developed to identify students as “active agents” (Mwaura, Sylva and Malmberg 2008, p.240) of their own learning process, in order to promote the link between cognitive, interpersonal, and intrapersonal skills. With an ultimate goal of providing the students in Madrasa schools with quality education, religio-cultural understanding, and skills that will prepare them for primary education, the MRC adapted a pedagogy from the High Scope Preschool Model to create a culturally appropriate constructivist curriculum (AKDN, 2008). The pedagogy at the High Scope Preschool Model combines Piagetian cognitive development and the Deweyan Progressivist View of Learning (Mwaura & Marfo, 2011). These frameworks recognize the importance of allowing children to “interact within the immediate world to construct an increasingly elaborate concept of reality” (Mwaura & Marfo, 2011, p.136) and to develop new patterns of thinking by gaining problem-solving skills. The High Scope and Madrasa models created curricula that surpass repetitive, didactic pedagogies, and attempt to engage students in an active learning process.

MRC’s adapted curriculum uses a constructivist philosophy described by the acronym MAMACHOLASU. The acronym represents the use of culturally appropriate materials, manipulation of objects, individual choice for school subjects of personal interest, local language use, and adult support (AKDN, 2008). This approach encourages children to strengthen cognitive skills, with culturally appropriate materials, as well as foster intrapersonal skills of self-direction,
and interpersonal skills of collaboration and communication. Mwaura, Sylva and Malmberg (2008) state that this curriculum allows for student exploration, cognitive and interpersonal development as well as interactive and shared thinking, through a “secure, warm, and pedagogically stimulating human environment” (p.240). Some research has argued that constructivist philosophies of curricula with students as active learners are based in Western ideals (Mwaura & Marfo, 2011). Mwaura and Marfo (2011) counter this argument, however, by claiming that young children learn to imitate, create, and co-construct “as natural 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” (p. 136). Therefore, the current theoretical framework of the constructivist Madrasa curriculum aims to provide a holistic learning environment, through which students gain cognitive skills that will prepare them for primary education, while maintaining culturally and religiously relevant content to develop inter- and intrapersonal skills.

**Implementation of Curriculum**

In the remainder of the curriculum section, we will discuss how the curriculum is employed in practice as well as the observed educational advancements of the students enrolled in Madrasa ECD programs. In the Aga Khan Foundation’s report “The Madrasa Early Childhood Programme: 25 Years of Experience,” there is a detailed account of the subjects taught at Madrasa schools as well as the traditional daily activities. In the process of employing the MAMACHOLASU pedagogy, the Madrasa teachers provide content training in the following subjects: “Islam, Math, Language, Interacting with and caring for the environment, Social and Emotional Development, Creative Arts, Health, Music and Physical Education” (AKDN, 2008, p.64). These categories integrate traditional subjects that increase student knowledge with more
intrapersonal and creative subjects such as social and emotional development, arts and music, and caring for the environment, as well as collaborative learning subjects such as physical education.

The content of the curriculum is adapted to fit the local community’s needs, according to Shelina Walli (personal communication, November 23, 2014), a Lecturer with the Aga Khan University, where some of the subjects are stressed more than others. For example, the programs in Tanzania currently emphasize Reading, Writing, and Arithmetic, while the programs in Uganda emphasize thematic curricula and indigenous languages (Walli, personal communication, November 23, 2014). Furthermore, multiple studies mention how the curricula is strengthened by such locally adapted processes that incorporate local languages, such as Arabic, Swahili, Luganda and English (AKDN, 2008) and the classrooms supplies consist of local, low-cost, culturally appropriate learning materials (Zimmerman, 2004). In so doing, the local community attempts to identify how to best serve their students with relevant content and interactive curricula.

In order to ensure that these curricular practices truly create environments where students are gaining 21st century skills, it is important to understand how the students experience their school days at Madrasa Schools. The school day begins with student and teacher greetings, followed by teacher led prayers and announcements on daily news (AKDN, 2008). This initial daily routine emphasizes respect for others and communal learning through religious prayer and understanding contemporary issues. Then the day is divided into group religious study, work time, and communal reflection (AKDN, 2008). Work time is spent according to individual student’s interests and includes activities such as word recognition, block building, reading, pretend play, sand and water play, arts, play tables (AKDN, 2008). Such learning includes the
use of local language and communication, stories and reading, as well as singing and arts (Zimmerman, 2004). With such variety of options, students are encouraged to gain literacy and numeracy skills, interactive and teamwork skills, religious values, critical thinking and problem-solving skills (AKDN, 2008). Once work time is over, the class concludes with a traditional knowledge-based lesson, which focuses on literacy and math (AKDN, 2008). With the multiple components of the ECD daily routine, students are exposed to various learning environments through which they are able to gain cognitive, interpersonal and intrapersonal skills. A former student, Naima, of the Madrasa ECD program described the positive effects of her early childhood studies:

"Such integration makes knowledge emotionally real and sensible. I also remember the many colourful play and learning materials in and outside the classroom, but I think the human aspect is what made all the difference in our enjoyment of play and learning. (AKDN, 2008, p. 51)"

Naima’s account of her experience exemplifies the lasting effect of the ECD program on student’s future learning, with particular attention to the positive role of human interaction and creative learning methods.

**Impact of Curriculum**

With an understanding of the philosophy behind the holistic curriculum and a picture of the student’s daily experiences, we can see the Madrasa’s strong emphasis of mixed-method learning and 21st century skills. The question remains, however, are students actually making academic gains in these programs? Are these programs succeeding in their goals of increasing cognitive skills and school readiness among underprivileged Muslim and other students? Mwaura and Marfo (2008) and Malmberg, Mwaura and Sylva (2010) conducted longitudinal studies with students in MRC ECD programs and non-MRC ECD programs in Kenya, Tanzania
and Uganda to identify whether these students were making cognitive gains. In both studies, the researchers found that children who attended Madrasa schools had higher cognitive gains than students who were in other non-Madrasa schools as well as students who did not attend any preschool program (Mwaura & Marfo, 2008; Malmberg, Mwaura & Sylva, 2010). These findings indicate that Madrasa programs are effective and the curricula and pedagogy are of a high quality compared to other preschools. Furthermore, Malmberg, Mwaura and Sylva (2010) found that the students who entered the Madrasa programs at the youngest age possible achieved the highest cognitive gains. To build on the findings on cognitive gains, the AKDN report presented preliminary findings from Uganda that students who attended Madrasa ECD programs had lower repetition rates in primary school than other students (AKDN, 2008). The data represented points to the argument that Madrasa ECD centers are strongly impacting underprivileged students’ abilities to gain cognitive skills, prepare for primary education and persist in the primary education system.

The MRC curriculum aims to support disadvantaged Muslim and other students in early development and prepare them to be successful students and members of society. With the use of a constructivist curriculum that promotes all three components of 21st century skills, the emphasis on culturally appropriate subjects and materials, and mixed pedagogy, the MRC programs allow students to thrive, academically and personally. The curriculum successfully weaves subjects and activities together that provide students with foundations of literacy and numeracy, intellectual openness and cultural awareness, self-direction, and collaboration. The MRC successes provide a strong example for how low-income and underprivileged communities can prepare their young children to be academically successful and active participants in society.
Teacher Training

In the previous section, we described how 21st century skills are promoted in student learning, and the following section shows how such student advancements rely upon the strong teaching quality promoted in Madrasa teacher training. The teacher training program has been an integral part of the Madrasa ECD model’s success, due to its ability to impart 21st century skills on teachers who then have command over the holistic curriculum. Since the inception of the Madrasa schools, the teacher training program has evolved to address the specific needs of the community trainers and the students being served. Furthermore, due to its success in preparing effective teachers, the Aga Khan Foundation now provides trainings to non-Madrasa teachers, government school teachers, teaching colleges and Maalims (religious leaders). In the following section, we will describe how the teacher training builds on teachers’ 21st century skills through instruction on pedagogical theory and practical teaching skills, interpersonal partnership building, and continual professional development to support students’ 21st century skill development.

Teacher Training Program: Inception and Evolution

From the inception of the Madrasa model, the objectives of the teacher training program effectively worked to empower young girls with little education and no formal training to become effective ECD teachers. The core of the program aligns with the 21st century skills which imply building cognitive, inter and intra personal skills. The Aga Khan foundation showed how imparting 21st century skills on their teachers could allow for the effective employment of a holistic curriculum that builds on those competencies in classrooms. In the first decade of Madrasa ECDs, the young girls who applied to be teachers had very little education and no formal teacher training. The only experience they had was handling children at home (AKDN,
2008). The teacher training program thrived due to the perception that teaching at Madrasa schools was seen as safe and relevant careers for mothers in the community (AKDN, 2008).

The main components of the training program combine pedagogical theory and practical application of those theories in the classroom under the guidance of a mentor. The pattern of training was simple. It was a “modelling and mentoring” (AKDN, 2008, p.27) approach. The modelling included classroom-based workshops, followed by in-class practical teaching, where each participant received guidance, observation, and critiques from a mentor. (AKDN, 2008).

Not only did this modeling and mentoring approach provide a skill set to teach effectively in the classroom to these young teachers, it also infused a sense of confidence in them. The modelling and mentoring pattern developed intrapersonal skills of confidence and problem solving while also creating an environment of trust, team building and collaboration within the groups, effectively building on the inter-personal skills of these student teachers. Throughout this process, teachers gained cognitive skills through instruction on pedagogy related to students as active learners with the use of locally available materials. The program enables the teachers to learn about the curriculum, child development and teaching practices simultaneously based on core principles of 21st century skills.

The teacher training has greatly evolved since its initial launch in response to teachers’ needs, in order to equip them with more comprehensive and intensive preparation. By 2007, the program had evolved into a training model that was more responsive to the needs of the student teachers and more cost-effective. The training schedules were shifted to coincide with regular school holidays. The trainees come together for three-week sessions during school holidays in April, August and December for a total of nine weeks. In addition to the initial training, the MRC offers short term courses, from time to time depending on the needs of the schools and areas
they are serving in. The evolution of the program exhibits the dynamic nature of Madrasa Schools and their adaptation to growing change in demand--a key component of Madrasa’s present day success (AKDN, 2008) This trajectory of evolution for the teacher training reflects the basic principles of 21st century skills. The program has continuously moved in the direction of becoming increasingly accessible to its teachers and responsive to their needs and schedules. This is important for communities where certain situations such as limited educational levels, socio-economic conditions and limited access cannot be changed. Capacity building is possible only by tailoring the program to the needs of the community. The training programs in practice today aim to integrate methods of increasing cognitive, intra and interpersonal skills. They address the three competencies through trainings related to learning pedagogy (cognitive), intellectual openness and cultural awareness (intrapersonal) and promoting collaborative planning and interactive learning methods (inter personal).

**Objectives of the Teacher Training Program**

The objectives of these trainings focus on developing the 21st century skills in the teachers who in turn impart those competencies on the children who attend the Madrasa ECDs. Learning to create an active learning environment falls in the cognitive domain. It includes building on literacy skills, critical thinking, reasoning, argumentation, and innovation. Another aspect of the training includes classroom management and practical implementation of the training in the classroom, which develops the teachers’ intrapersonal skills. These include taking initiative, garnering appreciation for diversity and reflecting on one’s own learning. The teachers are also trained to communicate effectively with students, liaise with parents and caregivers, and engage them in caring for their children (AKDN, 2008). This builds the third, intrapersonal component of 21st century skills, which include communication, collaboration, responsibility,
and conflict resolution. The training builds capacity in these teachers beyond classrooms. They become more self aware and confident, which allows them to express themselves better in the public (Zimmerman, 2004). The training helps teachers assess the needs of the children better and in turn become more effective teachers.

Hanifa Sheikh, the first teacher employed by Madrasa schools, recounts the impact of teacher training on her professional and personal development:

“I grew up with the project. I moved from nowhere to somewhere... I received a lot of training and exposure, which have become the backbone of my professional growth.” Hanifa goes on to say: “I became stronger and gained confidence. Before joining the Madrasa Programme I could not speak in front of people. Today I can address a crowd of 300 people confidently.” (AKDN, 2008, p.19)

Her words illuminate the personal gains teachers experience through the Madrasa teacher training program. At the conclusion of the training, the teachers are equipped with the cognitive, intrapersonal and interpersonal skills to effectively teach their students and positively impact their environment outside of work.

**Scaling of ECD Teacher Training**

The success of the Madrasa teacher training programs has been widely recognized in the various communities where they operate. In order to expand the expertise of ECD programs and pedagogy, the MRC has facilitated strong partnerships throughout East Africa. So far in addition to Madrasa teachers, the MRC has provided trainings and support to over 2000 non-Madrasa and 1300 government officials(AKDN, 2008). Additionally, the MRCs have expanded their training roles to non-ECD centers and we will provide examples on the ways in which the MRCs in Uganda and Kenya have scaled up their training programs and created strong community partners. The MRC, Uganda (MRCU) has expanded its exclusive training of ECD teachers to work with primary teacher training colleges, private sector companies, and government sectors.
(Aga Khan Foundation, 2013). In Kenya, the MRC has also been working closely with religious teachers at Madrasa, known as Maalims. The Maalims are practicing teachers in Quranic schools who focus on religious studies and are not part of the Madrasa ECD program. By extending the training to the Maalims, the MRC teacher trainers help develop the Maalims’ skills and knowledge on pedagogy of active learning (AKDN, 2008). A major benefit of this partnership is that the Madrasa program imparts training on the Maalims while simultaneously gaining insights into building religious content of the curriculum in return (AKDN, 2008). Weaving religion and culture into the program is again building on cultural awareness skills. The training program does not concentrate on the theological aspects but only philosophy and pedagogy of active learning. While remaining loyal to the core teaching principles of 21st century learning, the training program has succeeded in evolving, creating relevant partnerships, and scaling up while meeting community demands.

**Impact of the Training Program**

The teacher training program has evolved since its inception to appropriately address the needs of teachers and students in order to best equip those involved in Madrasa schools with 21st century skills. It has been successful in providing content knowledge of ECD pedagogy, built upon intrapersonal skills of teachers, and equipped teachers to effectively work with all other actors in a school, including other teachers, students, parents and community members. The teacher training program is a boon to the young women in these impoverished communities who previously had few job opportunities, and are now empowered, educated, and employed women. It has not only opened the doors for them as qualified ECD teachers but empowered them in ways other than they had expected (AKDN, 2008). The impact of these programs is multifaceted: teachers have a stronger grasp on relevant content, they are capable of imparting 21st century
skills on the students, and they are more developed individuals who play an active role in society.

**Parent and Community Education**

In the previous sections, we have discussed how curricula and teacher training are strong components contributing to the Madrasa schools’ successes and we will conclude our description of Madrasa programming with a discussion of how the parent and community programs develop 21st century skills among engaged adults and support student learning.

**Activities Developing Interpersonal and Cognitive Competencies**

Parent and community engagement is a crucial factor in the success of the Madrasa ECD programs’ abilities to develop community ownership and sustainability. The Madrasa model insures that community engagement is integrated in all stages of the development of early childhood programs (Zimmerman, 2004), which promotes interpersonal competencies among community members. At the initial phase, a needs assessment is conducted by the MRC and crucial discussions are held between MRC officers and community members including influential leaders. After the initial discussion, a meeting with more community members is held to discuss if pre-school education is critical. If the wider community agrees, another workshop with MRC staff is held to discuss the structure and functions of the school. By integrating community voices in critical decisions for ECD center development, parents and involved community members are able to hone interpersonal skills as well as intrapersonal competencies such as self-direction and empowerment.

The structure and role of the School Management Committee (SMC) is a critical determinant of parent and community engagement and interpersonal development. The SMC is elected, responsibilities of the committee and teachers are defined, and goals of schools are
clarified and agreed by the community. In the SMC, at least three women have to be elected out of eight members and members with different faiths are included to ensure diversity of parents’ perspectives and engagement (AKDN, 2008). A parent heads the SMC, and the remainder of the committee is made up of other parents, teachers, and administrators (Walli, personal communication, November 23, 2014). Subsequently, a contract is signed between the community and MRC to ensure the substantial commitment of time and effort by the community (Zimmerman, 2004). The community engages in classroom construction and teaching material development. Then, teachers are chosen by the SMC, SMC members receive capacity development, and teachers are trained. The SMC is a crucial component for connecting the community with Madrasa schools.

The MRC strengthens SMC members’ management and leadership capacities to run preschools. In the implementation process, there is joint monitoring of SMC and MRC staff every six months. Progress made is discussed and objectives are updated. Mwaura and Marfo (2011) explain that “this participatory process is intended to build community-level evaluation capacity, sensitize communities to quality issues, and inculcate a sense of ownership for sustainability” (p.136). After two to three years of monitoring and support, communities “graduate.” The graduation of preschools promotes the idea of communities sustaining the schools with less direct and in-depth support from the MRC staff. To promote sustainability, support is provided to teachers and communities after graduation as well (AKDN, 2008). As we can see from the process above, there is substantial emphasis on developing interpersonal skills of SMC members as well as community members in every step. These tasks, which require time and effort, are done with diverse members and they are expected to demonstrate leadership competencies and collaboration.
In addition to interpersonal skills, the program has a focus on cognitive skills for parents. MRC encourages parental involvement in children’s education. They hold parent workshops, parent-teacher meetings and home visits to cover various topics. The Aga Khan Development Network (2008) elaborated on the details of these programs by describing that parents learn “how children develop and the kinds of support they need from adults including through singing songs and sharing traditional stories, helping them to work on ‘everyday’ mathematics such as counting, sorting and going to the market with parents where they watch weighing and the use of money” (p. 57). MRC also recognizes the necessity to provide support to parents and community members as the “primary caregivers” (AKDN, 2008, p.55) so basic health and nutrition information is taught. This information provided through workshops and meetings enhance cognitive processes and strategies as well as knowledge of the cognitive competencies. Research has shown that programs that combine child-centered activities with support of child-parent interaction create the biggest impact in child development (Behrman & Urzua, 2013). Additionally, MRC staff facilitate communities to work through different problems in setting up and running pre-schools, which entail problem-solving and analyzing skills of the cognitive competencies. In some cases, SMC members came up with innovative solutions that were not thought of before. From the above, we can conclude that the Aga Khan Madrasa Model is promoting several competencies of the 21st century skills for parents and community members.

**Impact of Parent/ Community Development of Competencies**

With activities and events that foster 21st century skills, communities and parents have seen great impact in not only school management but also interactions within the community in general. Evaluations have proven that in Uganda, there is more mutual support among parents and individual contributions to enhance school life as well as child development. According to
the Aga Khan Development Network (2008), “The health, hygiene and nutrition of many children (and even some parents, according to teachers) have improved directly because of these programme additions” (p.57). Furthermore, in several schools, these programs have increased enrollment and improved fee collection as well as eliminated corporal punishment in some homes. Moreover, teachers are more engaged in involving parents in creating/renewing teaching materials as well as preparing snacks. They are also more motivated to make home visits and work with parents (AKDN, 2008). The Madrasa School model shows how the development of 21st Century skills of community members is correlated with improved student learning.

In addition to supporting student advancement, the experience of managing Madrasa schools has positively impacted involved parents and communities. Within the SMC, members are treated as equal participants regardless of diverse backgrounds and have open discussions. Another important outcome is the removal of numerous social barriers. For example, women have the opportunity to have meaningful conversations with male-decision makers, parents can participate in their children’s lives, children are involved in communities, and communities know how to make improvements on social issues. Shelina Walli (November 23, 2014) stated “parents and community members have gained knowledge and supported more programs … more and more parents and grandparents join the facilitators team through community based training in all three countries” (personal communication). Leadership and community ownership can be seen at the community-wide level. 35 MRC school communities in Uganda established primary schools on their own. The process enables communities to obtain skills that are “applicable to a range of social development activities, whether it is to support young children and their families, or to promote nutrition and health, or to support economic development activities and/or rural development” (AKDN, 2008, p.62). The strong emphasis on parent and community engagement
has allowed for expansion of programming in a culturally-relevant pattern that helps build upon the skills of involved adults and supports student learning.

Limitations and Recommendations

The Madrasa ECD model is lauded as a successful community-based program that addresses the needs of its local students and effectively promotes the development of 21st century skills through curriculum, teacher training and parent/community engagement; however, there are limitations in the programming that hinders expansion, universal impact, and measurement of skills development. One major issue for the Madrasa Model is financial sustainability. Many Madrasa schools throughout East Africa struggle to sustain their operations after graduating from the Aga Khan Foundation (Marshall & Keough, 2004). Without strong financial support, the schools are unable to continue programming while also retaining their highly trained teachers. There is an observed trend of teacher attrition; many of the trained teachers leave the MRC system for higher paying, private jobs (Bartlett, Stephenson & Cadaing, 2013). In these situations, MRC is continuously investing time and money in developing the human capital of new teachers. Due to these financial limitations and repetitive investments in teachers, the scaling up of MRC programs has been slow throughout East Africa and progress has been stunted in areas where sustainability is difficult.

Following a discussion of finances, and financial burdens in particular, it is pertinent to discuss how that affects the program’s ability to scale up further. Despite the financial issues mentioned above, the Aga Khan foundation intends to expand its programs throughout the Central and Western Nile regions. We are skeptical of the positive effect such expansion may have, considering the existing programs are currently unstable without support from the Aga Khan Foundation following graduation. The need for community-based ECD programming is
tangible in developing countries, and the Madrasa schools have proven effective in their existing locations; however, scaling up without enough support or understanding of future sustainability can be detrimental.

The limitations discussed so far relate to the structure of the Aga Khan model, however, one of the major limitations we identify relates to the progress of teachers and students. Currently, there are no internal processes in the schools for measuring student achievement and teacher efficacy. The data presented previously in this case study on student cognitive gains come from studies conducted by external researchers. While those studies present positive gains, it is also important for the Madrasa school network to have consistent internal measurements of achievement. Those implicit measurements would allow for comparisons in achievement across the countries, as well as provide schools a sustainable tool to indicate whether or not they are successful in achieving their goal of preparing students for entrance in primary education. If the Aga Khan Foundation can implement internal measurement metrics and lend attention to the financial constraints, they will be better equipped to effectively impact student learning and scale up Madrasa ECD programs.

**Program Evaluation**

In this final section discussing program evaluation, we will suggest how the AKDN can address their limitations and identify effective ways to scale up and promote locally sustained ECD programs. In order to evaluate the effectiveness of the Madrasa ECD programs, we suggest a three-pronged evaluation--an analysis of the theory of change, a wide scale mapping of programs, and an evaluation of student achievement in these programs. We propose a summative evaluation which analyzes the theory of change and whether or not the Madrasa School activities effectively achieve its goals.
The initial task of the evaluation will entail identifying the theory of change and evaluating whether the inputs, activities, and outputs, lead to the desired outcomes and impacts. Through our work in this case study, we have gleaned that the Madrasa Preschool Theory of Change is as follows: If the Madrasa schools can increase access to holistic, community-based Early Childhood Centers for poor and underprivileged students, then those students will be better prepared to enter primary education and develop as economically and personally stable individuals. Due to the size of the Aga Khan Foundation, we believe this evaluation could be conducted by an internal employee who is far removed from the ECD programming; an employee from the Aga Khan Development network could conduct the evaluation, as he/she will be familiar with the programs, but not personally involved in the Madrasa schools. This distance from the programs may limit biases toward the Madrasa schools, as well as the most cost effective option. Throughout the evaluation, the evaluator will use the theory of change as a measurement for the success and consistency of Madrasa programs.

In order to successfully analyze the theory of change, it will be necessary to conduct an extensive mapping of the existing programs. With schools in three countries and approximately 203 communities (Mwaura & Marfo, 2011), there is little information on the exact programming that takes place in all of the diverse teaching trainings and school classrooms. Therefore, it will be necessary for the evaluator to gather information on specific content provided in the teacher trainings, objectives and curricula in the classrooms, and specific community programming. Such information could identify how the methods of teacher training and the practical teaching involve the use of 21st century skills and learning. With that information, the Madrasa Schools will be better equipped to identify the collective impact their programs are having on student
achievement and community development. Furthermore, they will be able to analyze if the activities in different locations are aligned with the process of realizing their theory of change.

Once there is a better consensus on the diverse program processes, we believe it is imperative to explore the question, is there a positive student impact over time? As mentioned above, the Madrasa schools do not have any standardized internal measures of student achievement. We propose developing a standard metric for measuring student academic gains from the beginning of the Madrasa program to the end. Then, to supplement the evaluation of cognitive gains, we propose that each community develops a metric for evaluating student behavior. These metrics for social behavior should be standardized across the communities, however, the specific behaviors measured should be decided upon by the communities. For example, the following competencies could be measured in the following ways. For cognitive skills, we recommend using similar measures of cognitive development as used in Mwaura, Sylva and Malmberg’s (2008): verbal comprehension, early number concept, and picture similarity. For intrapersonal skills, the communities could measure responsibility through cleaning up after oneself and self-regulation by one’s ability to sit in place quietly for a specified time during a lesson. For interpersonal competencies, schools could measure students’ ability to collaborate through making something together with other students and communication by how students interact with teachers and peers. Through developing metrics for measuring student gains in a participatory process, the evaluator will be able to analyze student gains and provide schools with a sustainable tool for future evaluation and improvement.

Overall, with this summative evaluation, the Aga Khan Foundation will be made aware of their successes in realizing the theory of change for Madrasa schools, identify where gaps exist in impacting student lives, and promote communities to take ownership of the performances
of local ECD centers. As the Madrasa schools are leaders in providing quality community-based ECD to underprivileged students, a wide scale evaluation would ideally promote further success and transferability of best practices to other communities in need of additional ECD services.

**Conclusion**

Madrasa ECD centers provide holistic child-centered education systems in East Africa, which influence the development of 21st century skills among the involved students, teachers, and community members. The nature of the Madrasa program promotes healthy development of children as early as possible and local sustainability through community participation and the intention to create culturally appropriate programs. As this program addresses the needs of disadvantaged students in impoverished areas, it can be a model for other early childhood programs where such children have limited access to education. Our recommendations for a summative evaluation that examines the theory of change, maps the programming, and identifies measurements for student achievement could help the organization recognize its strengths, improve upon its weaknesses, and scale up the presence of Madrasa schools in an effective and sustainable manner.
Works Cited


