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African Early Childhood Development Curriculum and Pedagogy for Turkana Nomadic Pastoralist Communities of Kenya

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Abstract

Western conceptions of child development and the models of early education they engender predominantly shape services for young children in the first eight years of life all over Africa. This chapter brings a reconceptualist perspective to the critique of Kenya's continuing failure to ground early childhood programs and services in local cultural conceptions, developmental values, childrearing practices, and the practical day-to-day realities of children's learning through participation and apprenticeship in the contexts of family routines, community experiences, and economic survival activities. The chapter draws on work I have conducted in nomadic pastoralist communities in Kenya. That research reveals the disconcerting reality that (a) early childhood education programs privilege Western pedagogical practices over equally effective and locally more relevant ones, and (b) local communities are increasingly resentful of an educational system that alienates their children from their cultural roots in the name of modernization. Asserting the educational value of indigenous knowledge, I present a framework for integrating that knowledge and the naturalistic learning processes in local contexts into instructional programs in formal ECE settings. © 2014 Wiley Periodicals, Inc.

This chapter presents a critique of Western curriculum models for early childhood education (ECE) and offers a proposal for an alternative approach to ECE curriculum in pastoralist communities. I use examples from my native Turkana pastoralist indigenous knowledge, beliefs, and cultural practices to argue for a contextually and culturally relevant early childhood curriculum and pedagogy. Although Africa has responded strongly to international conventions and treaties to commit herself to ECE, the challenge is the relevance of the curricular content and pedagogical approaches adopted in various African countries. For example, I am concerned that the philosophy and vision of early childhood curriculum in Africa overly reflect Western ways of socializing and educating children. The reasoning in this chapter is grounded in theoretical arguments of a socio-, eco-, or ethnocultural nature (e.g., Harkness & Super, 2002; Rogoff, 2003; Vygotsky, 1978; Weisner, 2002), supporting culture as the basis for development. Using “*funds of knowledge*” (González, Moll, & Amanti, 2005) as a social capital construct for theorizing about resources within households, I make a case for affirming Turkana children’s culture as the foundation for their education. Focusing on cultural survival activities around livestock and the Turkana calendar, I demonstrate the possibility of a contextually relevant curriculum for Turkana pastoralist nomadic children. A comparison between the official ECE curriculum content in Kenya and Turkana cultural knowledge, beliefs, and practices reveals major similarities, on which I draw to establish a justification for the use of Turkana culture in science curriculum content within Kenya’s formal ECE system.

Overview of Western Models of Early Childhood Education in Africa

Driven by the need to make commitments to international agreements on children, as mandated by the United Nations Convention on the Rights of Children (UNCRC), the African Charter, and the Millennium Development Goals (MDGs), many African countries are expanding and improving early childhood care and education especially to reach vulnerable and marginalized children. At the center of this trend is the desire to ensure equity in education provision by increasing schooling success and reducing dropout rates and grade repetition across diverse socioeconomic backgrounds (Jaramillo & Mingat, 2008; MacNaughton, Hughes, & Smith, 2007).

At various world fora, including Education for All and the Dakar conference, and with support from the World Bank, UNICEF, UNESCO, ADEA, and WGECD (Working Group on Early Childhood Development), African countries have made commitments to develop and implement early childhood development (ECD) policies (Garcia, Pence, & Evans, 2008; Pence et al., 2004). However, even though ECD policies in Africa focus on curriculum based on play and integrated holistic approaches, the mode of

implementation varies in terms of the governmental ministry with primary responsibility for ECD policies and programs (Garcia et al., 2008). In addition, the level of investment also varies as many countries continue to give ECD a lower priority in comparison to primary and secondary education. For example, Kenya, South Africa, Zimbabwe, and Lesotho have ECD policy anchored in the Ministry of Education. The focus of ECD in these countries is on education rather than holistic development. But Ghana, Namibia, Mauritius, and a few others which appear to demonstrate strong ECD programs have their policies in ministries other than the Ministry of Education. For example, in Ghana, the Ministry of Women and Children's Affairs is responsible for ECD, the Ministry of Gender Equality and Child Welfare is implementing ECD in Namibia, and the Ministry of Women's Rights, Child Development and Family Welfare is responsible for ECD in Mauritius (Garcia et al., 2008). The ECD approach in these three latter countries has been to address children's programs within a family and child rights framework.

Nearly all African countries face various challenges, including the following: establishing a coordinating body for ECD, implementing a holistic integrated ECD approach, making decisions about the appropriate responsible ministry, ensuring that ECD is free, and ensuring curriculum quality and teacher training. Furthermore, although countries appear to respond to international demands to implement the educational rights of children through a robust ECE curriculum, a major criticism is that programs are based too closely on Western ideologies, with policies driven and funded by the World Bank and related multinational agencies, disregarding the uniqueness of each individual country's contexts (Biersteker, Ngaruiya, Sebatane, & Gudyanga, 2008; Garcia et al., 2008; Pence et al., 2004; Swadener, Wachira, Kabiru, & Njenga, 2008). The emphasis placed on the use of play in learning in ECE interventions in Africa has been questioned as reflecting a model directed by a Euro-American popular cultural narrative of "developmentally appropriate" practices (Samuelsson & Carlsson, 2008). As a result, a Western style of schooling continues to be the foundation of African children's education, while African cultures including local indigenous knowledge are largely disregarded (Dyer, 2006; Krätli, 2000, 2001; Marfo & Biersteker, 2011; Nsamenang, 2008, 2011a, 2011b). Indeed, the philosophy and vision of ECE do not appear to come from within Africa. Instead, the goal appears to be to place the socialization of African children in the hands of educational institutions, religious organizations, and the media informed by a Western ideology of modernization. The consequence is the extermination of African ways of bringing up children in schools for African children, a situation leading to alienation of parents from their school-age children.

Evidence from ethnographic studies conducted in Turkana (e.g., Dyer, 2006; Marianna, 2010; Ng'asike, 2010) suggests that a school-based education system framed on Western ideologies has alienated Turkana children

from their families. Educated individuals in Turkana are not necessarily successful as proclaimed by popular narratives of governments, missionaries, and child rights agencies that present education as the panacea for success in Africa. According to Marianna (2010), the Turkana are worried that *Akuj* (God) is annoyed because of the increasing abuse of alcohol, increased rate of crime, unemployment, and the emergence of informal marriages that characterize the life of schooled youth and school dropouts in Turkana. The perception of the local community is that schools, the emergence of modernity, Christianity, and urbanization have made the youth corrupted, “overheated,” and alcoholic, in addition to the loss of respect for the cultural norms and customs. The resulting idleness and unemployment are leading to increased crime. The behavior of the youth has attracted the wrath of *Akuj* to punish the community through frequent drought and hunger in Turkana communities. As a result, the community has become dependent on food handouts by the government and relief agencies. Poverty has contributed to the vulnerability of the community which can no longer be in charge of its development affairs and instead has turned to depend on Christianization, modernization, urbanization, and foreign interventions.

Although Turkana pastoralists acknowledge that education can lead to jobs that will translate to money which they can use to purchase livestock to stabilize their herds after the animals have been depleted by drought, Turkana families continue to experience negative effects of education as manifested by the behavior of many of their children who complete the formal school system. After families have made sacrifices to send their children to school, many children do not manage to find a job after school. As a result, boys are not able to gather a proper bride price for the mothers of their children and thus lose any right to their offspring. According to Marianna (2010), girls on the other hand find poor boyfriends who cannot marry or take care of them, necessitating the intervention of their families to offer material support to stabilize their marriages. Besides, the schooled youth have proved to be unproductive in the everyday pastoralists’ economy and are unable to contribute to the survival of their families compared to uneducated youth. The experience of the Turkana families and their youth calls for a rethinking of the goals of education in Africa, especially in communities that continue to be slow in embracing modernization.

However, Western education continues to thrive in Kenya, despite the challenges facing Turkana families, as the educated elite find the Turkana argument archaic and retrogressive. As a result, ECE is rapidly developing into formal educational institutions, where children aged 0–6 years are prepared for school readiness in preprimary classes across the country. The ECD curriculum model in Kenya is articulated in a policy framework (Republic of Kenya, 2005) that envisages a cross-sector coordination of various institutions offering services for young children through an integrated service delivery strategy that encompasses child protection, nutrition, health, and education. But in Kenya, the reality is that the holistic approach remains a

theoretical argument as young children are receiving care outside the family in preprimary classes using approaches that are largely Western and didactic in nature. The care of children outside the family has been accelerated by working women especially in urban areas and escalating poverty levels in Kenyan rural families. Although ECD provision in Kenya is not yet compulsory (Biersteker et al., 2008), increasing numbers of public and private primary schools are conducting admission interviews with children seeking to join Standard One classes as a result of the growing academic competition in ECD (Pence et al., 2004). Concerns are being raised regarding the whereabouts of those children who fail in these interviews. My interviews with teachers revealed that they could not account for where these children disappear to after they are turned away. Child rights continue to be elusive in Kenya as children are denied education as early as at the ECD levels. The practice by primary school teachers and private school authorities of conducting such selective interviews with the full knowledge of the Ministry of Education officials and without government intervention appears to be a glaring injustice. As a result, educationally disadvantaged pastoralist communities like the Turkana find it hard to engage with a system of education that is impossible to comprehend.

Context and Curriculum Activities in Rural ECD Centers in Nomadic Pastoralist Communities. Academic demands of the education system in Kenya create challenges in ECE curriculum interpretation across the country. Even though the Kenya Institute of Curriculum Development expects teachers to contextualize learning to reflect the cultural needs and local experiences of children (Ministry of Education & UNICEF, 2008), curriculum and instruction in most of the ECD centers in rural areas of Kenya remain didactic and academic. For example, in a typical ECD center in Kenya, irrespective of context, children receive direct instruction in the English language. Textbooks are written in English and stories read to children are of Western content. To enhance performance at the interviews, children in rural ECD centers recite the letters of the alphabet and number symbols written on the chalkboard from morning (8 o'clock) to lunch break (12 o'clock). In some of the preprimary classes I visited in Turkana, the alphabets and numerals (1 to 100) have been written with a permanent marker on the chalkboard for children to recite daily.

The classrooms are usually empty halls without furniture or mats for children to sit on. There is no display of learning materials, as the classroom walls of preprimary classes in Turkana are overventilated with open spaces without window shutters. During a windy or rainy day, for example, learning is nearly impossible as wind and rain flow into the classrooms and wind pulls down any resources hung on the overventilated walls. The consequences of poor instructional approaches and unfriendly classroom conditions are that young children experience learning apathy as they crowd in congested classrooms (Ng'asike, 2010). Lack of teachers compounds the challenges of learning as the pastoralist children simply hang around

Standard One classes to wait for meals and after they have had their lunch they immediately move to the dry river courses to engage in what they like best, which is natural play with sand and water at the riverbed.

In this natural play context, young nomadic children hunt birds and squirrels, collect insects, and engage in livestock herding. Observed streaming to the river courses, it is as if schools lock children in prison and time out of school is time to catch up with natural learning that is interesting, creative, and meaningful. Learning arrangements at the ECD centers are in sharp contrast with the everyday activities of children's life out of school. In ECD centers, for example, children's play is limited, as demands for rote memorization of alphabets and numerals take the center stage of their learning despite the availability of folklore materials from local cultures. For instance, the indigenous traditional knowledge with a rich base of folktales, songs, dances, myths, beliefs, knowledge of nature, environment, the universe, soil, water, plants, and others is not mentioned in any form in the education of African children. This cultural knowledge is invisible in African educational institutions as if it did not exist. The irony is that ECD children continue to learn at the doorstep of their own cultures in English from curriculum content based on Western ideology to the extent that the knowledge of families in the villages is ignored by the oppressive education system.

For example, I observed and interviewed a local middle-aged mother who, although only semiliterate, had been hired by the primary school to teach a preprimary class. During a class session I observed, the woman read a story to children about a man climbing a mango tree. Later, when I asked her whether she had seen a mango tree and a mango fruit, the woman had no idea of what this tree and its fruits look like. I asked her why she was teaching the children a story of a plant she had never seen and what meaning she thought this story had for the children. The woman responded that this was the book she was given and the only reading material available in the school. I asked her if there are trees with fruits in the community that people climb. She replied that they are there in plenty, and she mentioned *Egol* (palm trees). She also mentioned that there are plenty of local cultural stories that she would have narrated to the children if she was given a chance.

This was a case of a local resource not well utilized. This woman was obviously one of the elders who could be instrumental in providing rich Turkana cultural knowledge important in the development of these young children. For example, the ethnographic report presented here involves trees with which Turkana children are very familiar and could also serve the additional function of educating the children about local rituals associated with childbirth and the importance of fire in childbirth:

When a child is born, the placenta is buried in the soil, usually under the tree called **engomo**, so that mother and child are protected against the evil eye and any bad intention. If there is not **engomo** tree, any other tree would do.

After this, a traditional fire is lit up from two wooden sticks. These are the **loberu** and the **lokile**, the wife and the husband. **Loberu** lays down, and **lokile** enters in a small hole in **loberu**, and the person in charge so can make the fire. Everyone can perform this work, but the fire cannot be lent to anyone. (Marianna, 2010, p. 46)

This indigenous narrative has the potential to teach children deep understandings of their cultural history, traditions, values, trees, fire making, soil, friction, and the value of conservation of natural ecosystems. ECD centers hardly teach material like this (see Chapter 4 for further examples of relevant local knowledge excluded from African ECD curricula). The teaching is dry and thin, and focuses mainly on rote memorization of factual information. The woman at the preprimary school was aware of these narratives, but the forces of hegemony compelled her to teach Turkana children in a way that disrupts the spiritual harmony of the children's worldview.

Theoretical Support for Consideration of Turkana Cultural Knowledge and Practices

Privileging the Western concept of ECE over other cultures as advocated in the Kenyan ECD curriculum runs contrary to contemporary theory of child development in cultural context. Drawing from the work of Vygotsky (1978), researchers such as Bruner (1990), Moll and colleagues (Moll, Amanti, Neff, & Gonzalez, 2005), and Rogoff (2003) argue that individual development cannot be separated from the social, cultural, and historical contexts in which it belongs. Individuals are influenced by the kind of activities they engage with in everyday life within their cultural institutions. Vygotsky's theory underscored the role of culture in providing individuals with the cognitive toolkit for constructing understandings of their worlds and conceptions about themselves. According to Vygotsky, human intellectual development is a result of mediation of actions through artifacts and practices of the everyday cultural life of people. Cognitive skills rely on cultural inventions, such as literacy, mathematics, mnemonic skills, problem solving, creativity, and reasoning (Rogoff, 2003). Rogoff further extends Vygotsky's argument by pointing out that humans are biologically cultural and that cultural and biological characteristics are mutually dependent. Children learn to use the tools acquired through their cultural experiences to interact with adults, peers, and significant others to continue learning within the zone of proximal development (Vygotsky, 1978). Human beings use social processes and cultural resources of all kinds in helping children construct meaning of their worlds (González et al., 2005).

At the heart of Vygotsky's theory are the resources available at the household level within the everyday cultural experiences of families and children that can be harnessed to mediate children's learning. "Funds of knowledge" are defined as the "historical accumulated and culturally developed bodies of knowledge and skills essential for household or for

individual functioning and wellbeing” (Moll et al., 2005, p. 72). Research building on this concept emphasizes the integration of household and community resources to create instructional materials for teaching children in schools that operate in communities perceived as poor economically. The *funds of knowledge* orientation, when used as a framework to guide instructional design and delivery, provides context and relevance to classroom curriculum content. Examples are cultural artifacts, music, art, language, religion, schools, economic activities, agriculture, child care, construction, family chores, entertainment, and others (González et al., 2005).

Weisner (2002) uses ecocultural theory to explain the importance of *cultural pathways* (everyday routines with which children engage in family and community life) for learning and survival. Ethnocultural theory emphasizes that within a particular cultural context communities provide pathways for children’s optimal development. According to the concept of *parental ethnotheories* (Harkness & Super, 2002), parenting is culturally constructed, and children’s socialization and development involve a process of cultural assimilation or enculturation. Weisner, Harkness, and Super, whose ethnographic research has included work in Africa, agree with Vygotsky and Rogoff on the role of culture as a socializing agent and the foundation on which families bring up their children. These theories offer a conceptual framework for interpreting the importance of the cultural practices of Turkana families in educating young children. Turkana pastoralists’ lifestyles provide children the pathways for development which include everyday activities of their culture. Some of these pathways involve participation in economic activities used by Turkana families for survival (e.g., animal husbandry, agriculture, and hunting), sharing responsibility for family household chores, and engagement with natural phenomena (e.g., knowledge of weather and seasons).

Turkana Pastoralists’ Children Everyday Cultural Knowledge and Learning Styles. Drawing from the literature and theoretical grounding in support of context and culture as key in human development, in this section I make a case for a curriculum and pedagogy of Turkana nomads as a model African curriculum in ECE. I draw from my ethnographic research work in Turkana (Ng’asike, 2010) and the work of Marianna (2010). The research involved studying the social-cultural activities of the Turkana nomads and how the activities inform children’s education in a pastoralist community. Nomadic people live by hunting, livestock herding, and fruit gathering, among their many everyday survival activities. To survive in a pastoralist nomadic lifestyle, the skill of herding livestock is mastered by children as they grow from childhood through adulthood. Livestock herding skills progressively increase in complexity and in precision as children grow older. By being present around parents and observing adults interact with livestock, children master the physical as well as the psychological characteristics of a stock to the extent that they can tell any little scars, cracks, and cuts inflicted on the skin or at the hoof of an animal. On a

daily basis, children form a repertoire of the physiological characteristics of their stock. For example, it is the scars an animal gets from injury, small or big, which form permanent marks on its body after healing and other birth features that children and adults use when studying a particular species of livestock to master the appearance and the properties the herder requires to fully identify his or her stock. After studying their livestock for a long time children as well as adults know by looking at the hoof prints on the ground that this animal belongs to their herd or it is a straying stock from a different herd. Turkana herdsman and their children study livestock hoof prints with almost equal accuracy to the scientist studying fingerprints.

The prints made by livestock hooves on the ground can tell that this animal is from the lowland or from the highland. An elder I interviewed explained to me that animals that graze on the lowlands have long nails on their hooves and those that graze on highlands or at the foot of the slopes have smooth hooves or broken nails. The highlands are made of rough terrains of coarse sands, gravels, and boulders which eat at the hooves of the livestock to alter their shape and structure. This explains why the marks that livestock make on the ground are characterized by the sharpness or smoothness of the hooves depending on the roughness of the terrain of their grazing land. For example, a stone hitting the hoof of an animal will most likely hurt the hoof and after it heals a mark remains. This mark will be used by the herdsman to differentiate his stock from other herds. The herdsman keeps mental records of these physical changes no matter where on the animal's body the marks are located. This same skill is mastered by children as they interact with the livestock from childhood. Marks on hooves will differentiate the hooves of a herdsman's livestock from others and would assist in tracking a lost animal. Turkana herdsman use these unique marks to trace specific livestock of their herds when they are lost or stolen. This is precisely the knowledge the children also acquire so as to become skillful in animal husbandry and help support the family.

Understanding Turkana Calendar in Early Childhood Curriculum.

Teaching children knowledge of livestock, which is the core survival socio-economic activity of the Turkana, does not happen without knowledge of the universe and the environment which is critical in livestock husbandry. The mental strategy that the nomads use to make adaptation to the harsh environmental fluctuations (Dyer, 2006) depends on the people's knowledge of the universe.

The Turkana are versed in knowledge of weather and are able to make accurate rainfall predictions which are important for both livestock and human survival (Coughenour, 2004; McCabe, 2004). Droughts or any other calamities, including epidemics, do not usually find the Turkana pastoralists unaware, as the people are able to predict future events (bad or good) reliably enough to be able to prepare the community for them. One important way of understanding the universe and weather patterns is knowledge of the calendar which the Turkana use to follow rainfall patterns and

anticipate grazing patterns for their livestock. Children begin to acquire this knowledge from birth.

Table 3.1 describes the events of the Turkana calendar and presents the local names of the months and the corresponding English names. It is apparent that months of the Western calendar, to a large extent, match the Turkana months. Thus, Turkana local knowledge can be matched with Western knowledge and taught side by side, where each type of knowledge helps to strengthen the child's understanding of the world using multiple interpretations in different cultures. For example, the Turkana calendar begins in March, while the Western calendar begins in January. Each Turkana month has 28 days while the Western months vary between 28 and 31, depending on whether it is a leap year. The theory of collateral learning explains instructional approaches in which children are provided with opportunities to share knowledge of different cultures, to compare and contrast them to develop consensus of their understanding of these knowledge systems (Aikenhead, 2000; Aikenhead & Jegede, 1999; Jegede, 1997). A similar pedagogical approach has been proposed by Kawagley (2006) for Yupiaq children in Alaska. The Yupiaq people have 13 moons, while the Western calendar has 12 moons. Kawagley's curriculum has incorporated all the Yupiaq cultural knowledge (e.g., fishing and processing, weather, mental healing, native diet, and other topics) into instructional content.

Collateral learning theory argued that information should be presented to children in the manner in which they appear naturally so that children develop their own rationale regarding how they will use these different types of valid ideas for learning. Children require exposure to all kinds of cultural understanding for holistic development. Some of the knowledge will prepare them for national examinations, and other knowledge will be skills for survival at home and in the world. Aikenhead (2001) proposed the pedagogy of a culture broker in which a science teacher identifies the colonizer and the colonized and teaches the science of each culture. In this way, the culture broker acknowledges issues of social power and privilege in the science classroom. In a bicultural study of African refugee children learning in Canadian elementary and early childhood schools, Hennig and Kirova (2012) and Kirova (2010) reported that culture brokers brought African artifacts and other materials from African culture to help the refugee children learn in a context of their African culture while in a different continent away from Africa. The children learned creatively and were able to learn English when using their cultural materials without difficulty.

Pedagogical Value of Turkana Children's Indigenous Knowledge in ECD. African pedagogy proposed in science education by Jegede (1994) argued for alternative conceptions and constructivism in science instruction in which an individual's perception of knowledge is drawn from his/her sociocultural environment. According to Jegede (1994), "one way to help eradicate the fear or apprehension African children have towards science is to identify the elements of a number of fundamental scientific principles

Table 3.1. Turkana Months and Seasons

Seasons	Months		Characteristics of Turkana Months
	English	Turkana	
Wet season <i>Akiporo</i>	March	<i>Lomaruk</i>	The month of hunger. The clouds are starting to form. The rains are expected. Livestock (camels) are slaughtered for food as hunger strikes.
	April	<i>Titima</i>	The rains start to fall. The land turns green with plenty of grazing pasture for livestock. Milk is plentiful in the community. People are happy as food is available even from plants.
	May	<i>El-el</i>	The flowering month. The land is beautiful. Livestock are reproducing. Environment is rich in fauna and flora.
	June	<i>Lochoto</i>	<i>Lochoto</i> means muddy. Women and children wade in the mud as they milk the livestock. The community continues to experience rain storms. Kids and calves keep young children very busy.
	July	<i>Losuban</i>	<i>The month of offering</i> sacrifices to “God.” Time to thank “God” for the rains and food availability. Celebrations including weddings and spiritual ceremonies mark community traditional activities. Unpaid dowries are paid to the brides’ families.
	August	<i>Lotiak</i>	<i>Lotiak</i> means to separate wet season from dry season. The season of plenty and happiness ends, and food becomes scarce. Blood is extracted from goats, camels, and cows to supplement the little milk available from the stock. The end to friendship, and men leave their homes to look for pastures and food.
Dry season <i>Akamu</i>	September	<i>Lolong’u</i>	<i>Lolong’u</i> means the middle of wet season and dry season. Hunger is approaching as the food is limited. Animals are no longer capable of providing milk or blood extracts.
	October	<i>Lopo</i>	<i>Lopo</i> means cook or boil for longer hours. It is associated with cooking hard foods like wild fruits. People resort to hunting wild animals and gathering of wild fruits. Cooking wild fruits can be a hard task. Cooking is done by the water source as plenty of water might be necessary.
	November	<i>Lorara</i>	<i>Lorara</i> is falling fruits, seeds, leaves, and so on. Livestock (goats and sheep) depend on dry ripe fruits of acacia trees. People dry plant seeds for livestock and for human consumption. People resort to dried foods such as milk.

(Continued)

Table 3.1. Continued

Seasons	Months		Characteristics of Turkana Months
	English	Turkana	
	December	Lomuk	Lomuk means cover. All the fruit leaves disappear, and trees start to blossom to form canopies. This is the time for adaptation of plants and livestock to survive dry weather.
	January	Lokwang	Lokwang means white to signify dryness associated with the month. There is severe hunger in the community. Children are malnourished. Livestock is slaughtered to sustain the families against the drought.
	February	Lodunge	Lodung'e is putting off the dry season. The dry season comes to an end ushering in the start of a wet season.

Source: Ng'asike (2010) and Marianna (2010).

in some of Africa's so called fetish, primitive, or crude practices, and to link these practices to some western science principles" (p. 128). To help African teachers implement Jegede's proposed pedagogy in early childhood centers in Turkana, I draw from my dissertation findings to argue for the connection between early childhood curriculum concepts and local indigenous knowledge of the Turkana people (Ng'asike, 2010).

Table 3.2 is an attempt to draw a comparison of some of the curriculum content of Turkana culture with topics in the Kenyan ECE science curriculum. Although the similarities are evident, the challenge is how to draw from children's experiences of their culture in teaching formal school content. If pedagogy is the quality of social engagement between adults and the children within the zone of proximal development (Marfo & Biersteker, 2011; Rogoff, 2003), African children will benefit when the local cultural experiences of children are used in providing context to scientific concepts in classroom instruction. This also includes use of cultural communication tools such as proverbs, myths, stories, songs, games, and other modes of interaction to ensure learning is culturally engaging and stimulating to children in early childhood classrooms. Another property of African pedagogy is that knowledge is passed indirectly to children through observation. In this approach, children are present around adults observing and internalizing passively the knowledge and skills of their culture. For example, children learn by observing the dances and rituals performed at ceremonies, which they role model in their sociodramatic play activities when practicing knowledge learned from school subjects. Elders also teach children directly with stories, myths, and proverbs of rich narratives from their culture using a generative and unwritten curriculum (Nsamenang, 2008, 2011a; Nsamenang & Tchombe, 2011). Elders create this generative curriculum as soon

Table 3.2. Comparison of Formal School Science Content and Turkana Everyday Cultural Practices

<i>Kenyan Early Childhood Curriculum Content</i>	<i>Turkana Sociocultural Practices of Everyday Family Survival Activities, Knowledge, and Beliefs</i>
<ul style="list-style-type: none"> • Human body 	<ul style="list-style-type: none"> • Turkana body is thinner and faster, gets less sick, survives with little dietary intake, the legs are straight and the neck is upright, the body is generally hardened to withstand long hours of walking and hard nomadic pastoralist environment • Turkana fisherman is stronger although easily prone to disease attack; fisherman body is thicker, fatter, bowed legs, poor diet; fishermen are not considered friendly (hotter) • The town person/school pupil is weaker, prone to diseases, generally perceived by the herdsman to be lazy, dandy-looking but straight; the diet of town people or of school children is perceived to be poor diet most often it is maize grains, beans, or maize flour with insufficient fats, and so on. Modernized people are considered softer and aggressive (hotter)
<ul style="list-style-type: none"> • Health education 	<ul style="list-style-type: none"> • Reproduction pattern of livestock • Livestock treatment • Use of herbs in treating both humans and livestock • Birth ceremonies, placenta disposal beliefs, and so on • Infant care and feeding taboos and beliefs
<ul style="list-style-type: none"> • Plants 	<ul style="list-style-type: none"> • Plants for agriculture (drought-resistant plants) • Animal pasture and plant classification • Fruit gathering
<ul style="list-style-type: none"> • Weather 	<ul style="list-style-type: none"> • Studying weather patterns and clouds, rain making • The Turkana calendar
<ul style="list-style-type: none"> • Water 	<ul style="list-style-type: none"> • Watering livestock • Water exploration • Rain making
<ul style="list-style-type: none"> • Animals 	<ul style="list-style-type: none"> • Milking livestock • Naming livestock • Livestock treatment • Mastery of hoof prints • Mastery of animals' physical characteristics (colors, horns, facial appearance, branding and clan symbols) • Reproduction pattern of livestock • Livestock treatment • Herding and tracking livestock

(Continued)

Table 3.2. Continued

<i>Kenyan Early Childhood Curriculum Content</i>	<i>Turkana Sociocultural Practices of Everyday Family Survival Activities, Knowledge, and Beliefs</i>
<ul style="list-style-type: none"> • Soil 	<ul style="list-style-type: none"> • Mastery of hoof print marks on different soils • Mastery of grazing lands • Lowlands, highlands • Mastery of grazing pastures • Mastery of plant habitats • Mastery of water exploration by studying rocks and sandy soils
<ul style="list-style-type: none"> • Food 	<ul style="list-style-type: none"> • Preserving foodstuffs • Animal skinning and slaughtering • Making cheese • Drying milk, meat, fish • Tracking animals • Livestock treatment • Preserving foodstuffs • Fruit gathering • Turkana perceive their diet to be better than school diet
<ul style="list-style-type: none"> • Light 	<ul style="list-style-type: none"> • Fire-making • Studying the sun to interpret weather and natural calamities
<ul style="list-style-type: none"> • Energy 	<ul style="list-style-type: none"> • Fire making • Sharpening with stones or hard steel
<ul style="list-style-type: none"> • Sound 	<ul style="list-style-type: none"> • Mastery of livestock sounds
<ul style="list-style-type: none"> • Air 	<ul style="list-style-type: none"> • Strong sense of the environment and livestock
<ul style="list-style-type: none"> • Making work easier 	<ul style="list-style-type: none"> • Sharpening with stones or hard steel • Rabbit snares

Source: Ng'asike (2010) and Marianna (2010).

as children begin to follow the ceremonies and everyday survival activities of their families as early as they start to crawl and walk. Young preschool children in Turkana, for example, practice herding young kids of goats and milking goats with the help of their parents. When children grow into young adolescents, they perfect the skills of animal husbandry as they graduate to herding bigger animals (goats, camels, cattle). An African curriculum is generative as it is creatively designed to refine the skills of children as they participate in everyday survival household chores. African pedagogy also relies on peer and sibling teaching in which child-to-child mentorship is a core strategy through which children learn the skills of independence, intelligence, and social responsibility (Marfo & Biersteker, 2011; Nsamenang, 2008, 2011a, 2011b; Nsamenang & Tchombe, 2011; Serpell, 2011).

In the narratives of the Turkana calendar, learning consists of intense understanding of rituals as families worship and give sacrifices to God either to thank Him or to request for rain, and so on. The songs, ceremonies, myths, and stories are used by the families and the children as they follow events of nature using the calendar. The richness of the language, the culture, and the practical activities children are involved in at home make the acquisition of knowledge and skills enduring. The irony is that African cultural knowledge and pedagogy do not feature in school content in African countries (Dyer, 2006; Krätli, 2001; Marfo & Biersteker, 2011; Nsamenang, 2008; Ntarangwi, 2004). In Kenya, the academic environment appears to take priority over authentic learning. ECD centers teach children to memorize alphabets and numerals as a routine.

Another example to learn from is a science curriculum developed by Aikenhead (2001) in Alaska, referred to as “rekindling traditions,” in which Aikenhead, with support from elders, taught alongside Western knowledge Aboriginal knowledge of snowshoes, nature’s hidden gifts, the night sky, survival in our land, wild rice, trapping, indigenous plants that heal, and so on. The Aborigine children used their knowledge to help discover similarities with the Western science or use the local science knowledge to critique school science knowledge. For example, Aboriginal culture has 13 moons and Western science has 12 moons. Each culture maintains the number of the moons without forcing the other to change or assimilate to the other. This is very similar to the calendar months of the Turkana children, which should be taught side by side with the Western calendar to help the child learn knowledge from a meaningful context. Rekindling curriculum is an example of a cross-cultural pedagogy that creates bridges to facilitate smooth border crossing between Western culture and indigenous cultural perspective. Humanistic, collateral, and culture brokers argue for smooth border crossing in bicultural and multicultural education (Aikenhead, 2001; Aikenhead & Jegede, 1999; Hennig & Kirova, 2012; Kirova, 2010).

Conclusion

Recent developments across the continent show that African countries have committed themselves to implementing early childhood development and education programs, even though the content of the curriculum is largely Western. In this chapter, I have presented curriculum ideas and pedagogical principles, based on the culture of Turkana nomads, as a way of integrating African culture in ECD. I have pointed out that learning environments in many rural schools in Kenya lack proper infrastructure and appropriate learning materials. The scarce resources that teachers use to teach preschool children are mainly of Western origin. English dominates the learning in early childhood as a result of the dominance of NGOs and churches in the management of ECD services in rural communities in Kenya. This chapter

is intentionally provocative and aimed at challenging African educators and researchers to explore the possibility of a more African ECE system.

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