

## What can Schools Learn from Children about Use of Culturally Relevant Methods and Materials?

Maureen Mweru and Catherine Gakii murungi

Early Childhood Studies Department,  
Kenyatta University,  
P.O. Box 43844-00100, Nairobi, Kenya.

**Corresponding Author: Catherine Gakii murungi**

---

### Abstract

The methods and materials used by teachers in schools has been examined by various researchers. However, sibling teaching and the materials and methods used during sibling teaching is an area that has not received much attention. There is therefore a paucity of literature on the teaching strategies older siblings use when instructing younger children. This paper therefore is based on a study that set out to investigate the materials and methods used during sibling teaching among children in Kenya. This study was important as most children spend a significant proportion of their time with their siblings resulting in siblings having a great influence on each other. In this study, the older siblings were found to use locally available materials such as stones, sticks, leaves and seeds to teach various concepts and skills to younger children. They also used traditional games, songs and story telling. They taught their younger siblings not only the appropriate norms and values, but also instructed them on various concepts taught by teachers in Kenyan schools. This paper therefore recommends that teachers just like older siblings should use locally available materials and culturally appropriate teaching methods.

---

**Keywords:** home instruction, instructional materials, non-traditional education, peer teaching, preschool education, sibling teaching.

---

### INTRODUCTION

Research has revealed the importance of siblings in children's cognitive (Perner, Ruffman, & Leekam, 1994), social (Brody, Kim, Murry, & Brown, 2003) and emotional (Howe & Ross, 1990) development. Studies have also examined sibling teaching in laboratory studies where older siblings have been instructed to teach younger children cognitive or construction tasks (Azmitia & Hesser, 1993; Cicirelli, 1972, 1973; Hancock & Kaiser, 1996; Klein, Feldman & Zarur, 2002; Klein, Zarur & Feldman, 2003; Stewart, 1983). Mother-child teaching has also been compared with sibling teaching (Cicirelli, 1976) and other studies (Volk, 1999) have focused on a single family where a kindergartners' older siblings teaching strategies were compared to those used by the kindergartners' teacher. Research therefore has established that older siblings teach younger children various concepts and skills.

Parents have also been perceived of as "trainers" (Harkness & Super, 1995) and various studies (Jahoda, 1982; Middleton, 1970) have labelled childrearing customs "education". Studies based on this perspective have focused on the detailed description of processes through which adult culture is transmitted to children, and how educational practices have signalled the demands of adult life.

Older siblings and parents therefore play a very important role as teachers and cultural transmitters to children. Older siblings especially may play a more significant role in many non-western cultures where they are considered as culture brokers who may be as influential or even more influential than parents in socializing young children (Weisner, 1989; Whiting & Edwards, 1988). The relationship between siblings and the interaction between them is therefore of great importance if effective sibling teaching is to take place.

### PROBLEM STATEMENT

The uniqueness of the sibling relationship has led researchers to acknowledge that this relationship is one of the most potentially important influences on a child's development (Dunn, 1988, 2000; Newman, 1996). It is therefore important to carry out more investigations on the interaction among siblings. A critical review of literature however reveals that most published research on sibling interactions has focused on siblings in western countries. The influences of children's relationships with siblings in developing countries and especially in Africa are rarely documented. In addition, there is scant literature on the materials or methods used during sibling teaching. This paper therefore is based on a study that set out to investigate the materials and methods used during sibling teaching among Agikuyu children of Kenya.

### **limitation of the study**

Although most of the families approached by the researcher agreed to take part in the study, a few families declined to participate. The reasons given for this included a fear of being videotaped since there was a belief by some of the families that video tapes and pictures could be used to bewitch those who had been video taped or whose photographs had been taken. However, in spite of this, the researcher was able to collect adequate data for the study.

### **METHODOLOGY**

Gatundu North division of Thika district in the Central Province of Kenya was the study site. Thika district is situated approximately 40 kilometres east of Kenya's capital Nairobi. This site was selected because it provided a fairly homogeneous rural community. The sample frame included 67 older siblings and 34 toddlers. The older siblings were aged between four and twelve years old and included 38 girls and 29 boys. The toddlers were all around two years old with their ages ranging from 20 to 33 months. There was an equal number of toddlers according to gender that is, there were 17 boys and 17 girls. Two year olds were chosen for this study because two years is the age at which children begin to enjoy playing near other children and also join in others play activities (Malley, 1991). It was expected that the two year olds in the selected sample would be engaged in play with older siblings.

All the participants in the study belonged to the Agikuyu ethnic community. The Agikuyu community was chosen because like many communities in Kenya, it is a community that employs sibling caretaking with older siblings often young children themselves tending to their younger siblings from infancy. The participants were recruited on a volunteer basis after a research clearance permit had been obtained from the Ministry of Education. The researcher and a research assistant approached the selected participants after the research assistant helped identify suitable families having both two-year-old toddlers and older siblings aged between four and twelve years old.

The data collection was carried out in thirty four homesteads. Video recording was done as older siblings interacted with the two year olds. However, before the actual fieldwork began, the researcher and research assistant prepared a schedule for two visits to each home which were not communicated to the families in order to get the most natural situations. The actual data collection was carried out during the second visit while the purpose of the first visit was to familiarise the families with the researchers in order to minimise any disturbances that may have been caused by their presence when the actual videotaping began later on.

During the first visit, the families were briefed about the manner in which the data collection procedure would be carried out and some video recording was done on this day but this data was not included in the data to be analysed at the end of the study. The families were informed that the main interest of the study was to find out what siblings did during the day when they were together.

The videotaping session was carried out during the second visit for one hour while the siblings interacted. However, videotaping began ten minutes after the researcher and research assistant arrived in the homesteads in order to reduce the intrusive effect of the researchers. Other family members who were in the homesteads but whose ages were not within the required age range were requested to go on with their daily activities as the videotaping took place. Some family members went on with their usual routines while others sat at a distance and watched the interactions.

After the videotaping, the teaching episodes in the video tapes were extracted from the longer tapes before transcription was carried out. It was important to extract the teaching episodes from the longer tapes because not all the contents of the videotapes were considered to be sibling teaching episodes for example, the children sometimes interacted with adults. From the 34 hours of tape, 14 hours, 43 minutes and 32 seconds of teaching episodes were extracted.

Teaching was defined as any activity the older siblings drew the toddlers' attention to that could have had the possible effect of transmitting knowledge. Therefore both verbal and nonverbal actions were considered as teaching activities. The teaching sessions were considered to have begun when the older siblings verbally or nonverbally tried to get the toddlers attention while the ends of the teaching sessions occurred when either the toddler or the older sibling who was interacting with the toddler left the scene without returning. Teaching episodes were also considered to have come to an end when either of the children changed tasks and began a new episode with a different activity. The children's interactions were analyzed by qualitative data analysis.

### **RESULTS**

The findings of this study were that the older siblings taught the younger children various skills and concepts which included appropriate norms and values, school related activities, personal hygiene matters, how to perform daily chores and how to play children's games.

The children were found to use locally available materials such as stones, sticks, leaves and seeds in

their instruction. In addition, they used traditional games, songs and story telling. Excerpts from the transcripts showing some of the skills and concepts the older siblings taught the younger children and the methods and materials they used are presented in the following section. The findings on the methods and materials used are also summarised in table 1.

### Example 1

This example shows older siblings teaching a toddler how to count. The toddler's name is Lucy (T) and she is being taught how to count by her siblings Wanjiku (W) 6 years old and Njeri (N) who is 9 years old. The teaching episode begins with the children standing near a granary.

N: ((To Toddler and Wanjiku))  
We are going to count! Come here!

((Njeri is collecting pebbles from the ground))

W: ((To Njeri))  
I don't want (to play)

N: ((To Wanjiku))  
Why did you come to class without books?

N: ((To Toddler))  
Come here Lucy!

((The Toddler has been watching the older girls and is still watching them. Njeri spreads the pebbles on the ground and starts counting them))

N: ((To Wanjiku and the toddler))  
One, two, three, four, five, six. I have counted up to six. Now it is your turn

((The Toddler is still watching the older girls))

N: ((To Toddler))  
Lucy! Come here! Come and count!

((The Toddler walks towards Njeri and Njeri takes her hand))

N: ((To Wanjiku))  
Lucy is not like you! She wants to count.

((Njeri is now holding the Toddler's hand but the Toddler has held her hand in a fist))

N: ((To Toddler))  
Don't fold your fingers!

((The Toddler stretches out her fingers so that her palm is facing upwards))

N: ((To Toddler))  
Take the stones and start counting them!.....*One!*

((The Toddler picks one pebble))

N: ((To Toddler))  
That is *one!*

T: ((To Njeri))  
One

W: ((To Toddler))  
Pick another one and say *two!*

T: ((To Wanjiku))  
Two

N: ((To Toddler))  
Take another one and say *three!*

((The toddler looks up into the distance and starts walking away))

N: ((To Toddler))  
Sit down! Sit down! You are in class!

((The toddler has been distracted by something in the distance and is walking away. Njeri goes and stands next to Wanjiku who is seated on the granary ledge. The older girls start chatting. The Toddler is no longer paying attention to the older girls))

### Example 2

The second example shows a Toddler called Klini (T) being shown by her brother Kamau (K) how to feed cows. Kamau is 9 years old.

K: ((To Toddler))  
Go and get leaves for the cow

((Kamau and the Toddler walk towards the cow sheds. The Toddler picks a handful of grass from a sack nearby and takes it to the cows then she starts walking back towards Kamau))

T: ((To Kamau))  
They have finished

((Kamau gives her some maize stalks to take to the cows. The Toddler walks back to the cows and starts feeding them. One of the stalks has fallen to the ground))

K: ((To Toddler))  
And also those ones (referring to the stalks that have fallen on the ground)

((The Toddler picks the stalks on the ground))

- and feeds them to the cows then she runs back to Kamau))
- K: ((To Toddler))  
Pick some more
- ((The Toddler picks some more grass from the sack))
- T: ((To Kamau))  
They have finished
- K: ((To Toddler))  
Take more
- ((Kamau holds the mouth of the sack so that the Toddler can take more grass out of the sack. The Toddler walks to the cows holding grass in both hands. She starts singing as she feeds the cows))
- T: ((To the cows))  
And you! And you! And you!
- K: ((To Toddler))  
Come
- ((The Toddler runs back to Kamau. The Toddler wants to take more grass out of the sack but Kamau has already tied the mouth of the sack))
- K: ((To Toddler))  
We won't feed them anymore
- ((The Toddler walks away from Kamau. She starts staring into the camera then turns and looks at Kamau who is still standing next to the sack of grass))

**Example 3**

In this example older siblings are teaching a toddler how to dance. The toddler's name is Cynthia (T) and she is being taught how to dance by her cousins Njoki (JN) and Rosemary (R) both aged 9 years old.

- ((The Toddler is standing in the foreground singing to herself. Njoki and Rosemary are standing near the house. They are talking to a neighbours' boy (13 years) who is in the background. The boy is hitting a metallic container with a stick to produce a drumming sound to which the girls want to dance to))
- JN: ((To neighbours' boy))  
Not that one!
- R: ((To neighbours' boy))  
This one
- ((Rosemary starts humming the sound of the tune they want the boy to play. The Toddler is still in the foreground singing to herself as she watches the other children))
- NB: ((To Njoki and Rosemary))  
Where should I drum? (*referring to which part of the metallic container the boy should drum/hit*)
- JN: ((To neighbours' boy))  
Any
- ((The neighbours' boy starts drumming and Njoki and Rosemary start dancing. The Toddler watches them briefly then also starts dancing. The three girls continue dancing. Njoki's *leso* (*A leso is a long rectangular piece of cloth which women in Kenya tie around their waists*) comes undone and she stops dancing to tie it))
- JN: ((To Toddler))  
Dance!
- ((Rosemary and the Toddler continue dancing as Njoki ties her *leso*. Njoki finishes tying the *leso*. She holds the Toddlers' hands and starts dancing with her. The three girls continue dancing))
- NJ: ((To Toddler))  
Let us dance. Let us dance. Let us dance.
- ((The three girls continue dancing and at one point the Toddler sings to herself. The girls continue dancing. The Toddler has turned away from Njoki while dancing. Njoki moves and stands in front of the Toddler and holds the Toddlers' hands))
- NJ: ((To Toddler))  
Let us dance. Let us dance. Let us dance. Let us dance. Let us dance.
- ((The neighbours' boy plays the song to the end))
- NB: ((To Njoki and Rosemary))  
Which one should I now play?
- ((The Toddler starts singing to herself. The neighbours' boy starts drumming again and Njoki and the Toddler start dancing again. Soon Rosemary joins in and the three girls continue dancing. Njoki is dancing right in front of the Toddler. An aunt (grown up) who was watching in the background calls Njoki))

Aunt: ((To Njoki))  
Give her (Toddler) some space

((Njoki moves away from the Toddler and the Toddler continues dancing. An object the Toddler is holding in her hands flies out of her hand and lands in the foreground. The Toddler stops dancing and goes to pick the object. She returns to where the older girls are dancing))

NJ: ((To Toddler))  
Let us dance. Cynthia, like this. Like this.

((Njoki is now dancing in front of the Toddler. The Toddler also dances. The girls continue dancing))

NJ: ((To Toddler))  
Let us dance.

((The girls continue dancing with Njoki occasionally telling the neighbours' boy which song to drum. An aunt (grown up) who was watching in the background calls the children))

Aunt: ((To Njoki, Rosemary and the Toddler))  
You are too far away

((The song comes to the end and the neighbours' boy stops drumming. Njoki and Rosemary move towards the house. The Toddler remains in the foreground))

Table 1. Methods and Materials Used During Sibling Teaching

<b>School Related Activities</b>	<b>Methods and Materials Used</b>
How to count	Pebbles; songs; traditional games
How to say the alphabet	Songs; verbal instructions
Names of objects	Verbal instructions; songs
<b>Daily Chores</b>	<b>Methods and Materials Used</b>
How to cook	Leaves referred to as vegetables; sticks referred to as cooking sticks; water; old cups, spoons; mud paste; soil referred to as rice; calabash; tin referred to as a stove; plastic bottles
How to carry a baby on the back and how to tie a baby to the caregivers back	A doll; sweater used as a shawl
How to take care of a baby	Bunch of clothes tied together to represent a baby
How to talk into a mobile phone	Small black plastic box representing a mobile phone
How to carry water in a container tied to ones back	Plastic bottle; rope
How to plough/till the ground	Sticks referred to as digging tools
How to weed	Sticks referred to as knives/machetes
How to feed farm animals (chicks and cows)	Seeds; grass; maize stalks; water
How to cut firewood	Sticks
How to sweep	Broom made from twigs
How to wash dishes	Old metal plate; water
How to build a house	Old planks of wood

<b>Norms and Values</b>	<b>Methods and Materials Used</b>
How to shake hands/greet visitors	Verbal instructions; directing toddlers hand
Good manners	Story telling
How to sing traditional songs	Verbal instructions; singing
Traditional dances	Older sibling dances/models
How to drum	Empty plastic container; metal tin; sticks
Activities before attending a church service (bathing and washing ones hair)	Older sibling as model; water
Proceedings during Christian church services	Acting out a church service; preaching, singing, drumming (hitting an old plastic bottle with a stick)
How to share items/avoiding selfishness	Verbal instructions
How to pray (closing eyes and maintaining a serene atmosphere)	Older sibling as model; verbal instructions
<b>Personal Hygiene/Taking care of oneself</b>	<b>Methods and Materials Used</b>
Not to eat a banana without peeling it	Verbal instructions
How to wash ones legs	Older sibling as model; water; pail
How to bathe; apply petroleum jelly	Older sibling as model
Keeping safe/keeping away from a goat	Verbal instructions
Keeping hens away from one's plate of food	Verbal instructions
Covering oneself so underclothes are not visible	Verbal instructions
<b>Games</b>	
Ball games	Balls made from old polythene papers and sisal string
Local chess game	Old cardboard box; bottle tops; stones
Local pool game	Long sticks and marbles
How to swing a rubber strip around the waist	Old rubber strip
How to play a singing game	Verbal instructions; singing
How to swing a rope during a rope skipping game	Sisal rope; verbal instructions
How to sing into a microphone	Empty rolls of toilet paper; torch referred to as microphone
Hide and seek	Verbal instructions; modelling
How to make a toy car	Old cardboard boxes; sticks; string

**DISCUSSION**

This study found that older children used locally available materials to teach their younger siblings

various concepts and skills. In many countries where financial resources to purchase learning materials such as books and pencils are scarce, teachers can

borrow a leaf from children's use of objects in their environment. For example, pupils learning to count would be encouraged to count stones, sticks or seeds. Practical lessons involving the use of objects found in the environment therefore should take the place of cramming and rote learning.

The findings of this study also show that older siblings have the ability to teach not only appropriate norms and values, but also various concepts taught by teachers in Kenyan schools. Teachers can take advantage of this by encouraging children to assist their younger siblings with school tasks and homework. In many African countries, not all preschool age going children attend preschool due to several reasons such as poverty which means that parents cannot afford to send their children to preschool. In such instances children who are attending school would play a useful role as tutors to those children who cannot attend school. Just like older children use songs, stories and games to teach certain values or concepts to their younger siblings, so should teachers use indigenous or traditional songs and stories when instructing children. There are many benefits that inclusion of songs, dance and games can have in the teaching-learning process for example, through traditional games children can obtain fundamental skills for effective living in their social context (Kenyatta, 1965).

## CONCLUSION

Many schools in developing countries are facing various challenges including the lack of resources needed during classroom instruction. This lack of resources has at times been viewed as contributing to the dismal performance witnessed in national exams and pupils' failure to understand various concepts taught in school. Therefore, based on the findings of this study, this paper recommends that teachers just like older siblings should use locally available materials and culturally appropriate teaching methods. Such strategies may generally improve the education system.

## REFERENCES

Azmitia, M., Hesser, J., 1993. Why siblings are important agents of cognitive development: A comparison of siblings and peers. *Child Development* 64, 430-444.

Brody, G. H., Kim, S., Murry, V. M., Brown, A. C., 2003. Longitudinal direct and indirect pathways linking older sibling competence to the development of younger sibling competence. *Developmental Psychology* 39, 618-628.

Cicirelli, V. G., 1972. Concept learning of young children as a function of sibling relationships to the teacher. *Child Development* 43, 282-287.

Cicirelli, V. G., 1973. Effects of sibling structure and interaction on children's categorization style. *Developmental Psychology* 9, 132-139.

Cicirelli, V. G., 1976. Mother-child and sibling interactions on a problem-solving task. *Child Development* 47, 588-596.

Dunn, J., 1988. Annotation: Sibling influences on childhood development. *Journal of Child Psychology and Psychiatry* 29, 119-127.

Hancock, T. B., Kaiser, A. P., 1996. Siblings' use of milieu teaching at home. *Topics in Early Childhood Special Education* 16, 168-190.

Harkness, S., Super, C., 1995. Culture and parenting. In: Bornstein, M. H. (Ed.), *Handbook of parenting*, vol. 2: Biology and ecology of parenting. Lawrence Erlbaum Associates, Publishers, New Jersey, pp. 211-234.

Howe, N., Ross, H. S., 1990. Socialization, perspective-taking and the sibling relationship. *Developmental Psychology* 26, 160-165.

Jahoda, G., 1982. *Psychology and anthropology: A psychological perspective*. Academic Press, New York.

Kenyatta, J. (1965). *Facing Mount Kenya*. USA: Random House Inc.

Klein, P. S., Feldman, R., Zarur, S., 2002. Mediation in a sibling context: The relations of older siblings' mediating behaviour and younger siblings' task performance. *Infant and Child Development* 11, 321-333.

Klein, P. S., Zarur, S., Feldman, R., 2003. Mediational behaviours of preschoolers teaching their younger siblings. *Infant and Child Development* 12, 233-242.

Malley, C., 1991. *Toddler development*. University of Massachusetts, Amherst, MA.

Middleton, J., (Ed.), 1970. *From child to adult: Studies in the anthropology of education*. National History Press, New York.

Newman, J., 1996. The more the merrier? Effects of family size and sibling spacing on sibling relationships. *Child: Care, Health and Development* 22, 285-302.

Perner, J., Ruffman, T., Leekam, S. R., 1994. Theory of mind is contagious: You catch it from your siblings. *Child Development* 65, 1228-1238.

Stewart, R. B., 1983. Sibling interaction: The role of the older child as teacher for the younger. *Merrill-Palmer Quarterly* 29, 47-68.

Volk, D., 1999. "The teaching and the enjoyment and being together": Sibling teaching in the family of a Puerto Rican kindergartner. *Early Childhood Research Quarterly* 14, 5-34.

Weisner, T. S., 1989. Cultural and universal aspects of social support for children: Evidence from the Abaluyia of Kenya. In Belle, D. (Ed.), *Children's social networks and social supports*. Wiley Interscience, New York, pp. 70-90.

Whiting, B. B., Edwards, C. P., 1988. *Children of different worlds: The formation of social behavior*. Harvard University Press, Cambridge, MA.