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Beyond School: The Forest as a Learning Environment for the Baka in Cameroon

Koji Sonoda*

Faculty of Humanities, Niigata University
*E-mail: sonoda@human.niigata-u.ac.jp

Abstract This paper explored the nature of the forest as a learning environment and compared it with that of the school across multiple interrelated spheres: natural environment, pedagogical relationships, and educational discourse among the Baka in Cameroon. The study of both practices and ideologies concerning teaching, learning, and schooling reveals that in the forest, pedagogical relationships are less fixed; rather, relationships between practitioners are developed. This contrasts with the school environment, where teachers tend to dominate students, and the school itself often imposes its authority on the community. Moreover, the forest offers learners the opportunity to acquire practical knowledge and skills for livelihood through personal experience, whereas the school is perceived to bring "wealth"—though it is almost impossible in reality. Clearly, the forest is not merely a school; it surpasses the school in allowing learners to learn at their discretion, with both expert and learner simultaneously becoming teachers and students.

Keywords: Knowledge construction; Pedagogical relationships; Pedagogy of the oppressed; Personal experience; Schooling.

Introduction

My long-standing friend and informant, Ambo (a fictitious name), once told me, "forest is school" (*sìkulù na bele* literally means "the school of [the] forest" in Baka) (See also Sonoda et al. 2018: 164). He used this phrase to assert that all essential knowledge and skills for forest life are acquired through foraging practices, such as identifying edible plants, using plants for food and medicine, and navigating the forest. The forest serves as a learning environment where children gain knowledge through active participation in livelihood activities, including hunting and gathering. However, I found it uncomfortable to equate the forest with a school.

In the Western industrialized world, we are accustomed to labeling any teaching or learning environment as a "school". However, it is essential to recognize that educational environments globally do not always conform to a formal school system. Thus, the question arises: Is the forest a school? This inquiry does not suggest that the educational system within the forest is equivalent to that of a school. Yet, when discussing teaching and learning in the forest, the concept of

school tends to become central.

The purpose of this paper is to provide insight into what the forest (*bele* in Baka) represents to the Baka people, the value of the forest as a teaching and learning environment, perceptions of school education, and the limitations of the notion that "forest is school": the forest is more than a school. This is a brief portrait of the educational environment of the Baka people.

Is Forest a School?

I. The Baka people

Central African hunter-gatherers, also known as Pygmy, consist of over 15 groups. The Baka are one of these groups. The Baka are widely distributed across the Congo Basin rainforest, especially in Cameroon, Republic of the Congo, and Gabon, with a total population estimated at 30,000–40,000 (Bahuchet 2014). A government-imposed sedentarization program in the 1960s significantly influenced agriculturization, leading many people to settle near busy roads frequented by logging trucks and other vehicles (Hewlett 2000). In Cameroon, the Baka engage in various subsistence activities, including cultivation, hunting, gathering, and fishing. They often forage for yams, meat, nuts, and honey in the forest, contributing to both their income and consumption.

The Baka and neighboring farmers have long coexisted and interact daily in social and economic contexts. During the dry season, many Baka men, women, and children work in farmers' fields, planting, weeding, and harvesting.

II. The Baka people and the tropical rainforest

The Baka people have had a long-standing, unique relationship with the forest, which has influenced forest management practices. First, let us consider the ecological nature of the forest. The tropical rainforest, also known as the Congo Basin, extends into South Cameroon. This region is divided into several areas based on annual rainfall. For example, the L region, where I conducted the research, is in a transitional forest zone with 1,700–1,600 mm of annual rainfall (Chujo 1989). This area is abundant in various fruit species, particularly *Irvingia gabonensis* (*peke*) with its dried kernels being a principal commercial product (Ichikawa 2020: 9–10). However, the inhabitants' livelihood is at risk due to forest degradation from logging and agriculture.

The forest area is categorized based on its intended use, including reserved forests, protected wildlife areas, cutting permits, and community forests (Ministère de Forêts et de la Faune 2024; Hirai & Yasuoka 2020). It is important to note that the hunting and gathering activities reported in this paper were conducted only within community forest areas.

Bele in Baka refers to the forest, region, country, and bush in general (Brisson 2010: 15). In daily use, it also means trash disposal (*kpi a bele* refers to taking out the garbage, like cassava peels). Thus, people often throw food waste in the

bush. From a teaching and learning perspective, the forest serves as a playground for children. Kamei (2005) reports three play areas for Baka children: the forest, the settlement, and the schoolyard. Each area corresponds to specific types of play. The forest is associated with tradition-oriented play, such as foraging, hut building, and mimicking ritual spirits. In the settlement, children play house, sing and dance, and engage in activities involving modern items like cars. Lastly, the schoolyard is where children play competitive games like soccer and masse game (a group game played by girls). To summarize, tradition-oriented play is prevalent in the forest, while modern-oriented play occurs in the settlement and schoolyard. The schoolyard is distinct from the others due to the frequent competitive games that it hosts (Kamei 2005: 352).

III. Baka children' s activities in the forest

Baka children engage in a vast range of activities, as shown in Table 1 (Sonoda 2021: 67). The activities are categorized into domestic chores, hunting, gathering, fishing, and others. The "others" category mainly includes activities that are common but not consistent. Most activities are performed by both boys and girls, though there are slight gender trends in certain tasks. For instance, only boys are observed making field mouse traps, while girls are primarily involved in bail fishing.

To what extent do Baka children engage in daily subsistence activities? In addition to documenting these types of activities, I collected time-sampling data based on age (see Sonoda 2021: 230–246 for details). The data concerns both boys and girls aged 5–10 years. On average, children spent 162.5 minutes in the forest (n = 8) with a maximum of 310 minutes for an older boy and a minimum of 40 minutes for a young girl. For children over ten years old (including adolescents), the average time was 270 minutes (n = 5), ranging from a maximum of 430 minutes to a minimum of 100 minutes.

Observations indicated that a boy would return quickly if he failed to catch a giant rat, possibly expecting girls involved in bail fishing and adults returning with cassava and plantains to provide for him. It was often noted that an old man criticized the boys for not making an effort to hunt and gather, though it is likely they lacked the skills. Conversely, girls were likely to leave camp with older females to engage in bail fishing and foraging. Compared to boys, girls were more actively involved in these daily subsistence activities.

This indicates that as children grow older, they tend to spend more time foraging, often accompanied by adults and siblings. These findings are consistent with MacDonald's (2007, 2012) work, which illustrates that children's physical and intellectual development, including height and walking speed, can influence their participation in subsistence activities from an early age (MacDonald 2007: 393, 2012: 375). Assistance from others also plays a crucial role in facilitating their participation. Thus, older children can often stay away from the camps for extended periods to travel greater distances with their family members.

Table 1 Types of activities in the forest and participation among Baka children

Types		How to participate	Gender
Domestic chores	Fetch water (*sèngo*)	Transport water container	Both
	Cook (*loà*)	Help with distribution	Both
	Collect firewood (*wà*)		Both
	Make fire		Both
	Take care of younger siblings		Both
	House cleaning		Both
	Transport objects	Machete, tobacco, etc.	Both
Hunting	Giant rat hunting (*gbè*) (with adults accompanying)	Search for rats, smoke/transport objects, cover holes, look for other holes	Both
	Hunt other animals	Transport the animal	Male
	Butcher animal	Hold the animal's legs, fetch water, prepare pots and leaves, help with distribution	Both
	Make field mouse trap		Male
Gathering	*Irvingia* nuts, African oil beans (*Balaka*)		Both
	Mushrooms (*túlú*), winged ants, caterpillars (*kópó*)		Both
Fishing	Bail fishing (*ngúma*)	Create dams to lower water level, keep fish and river crab, collect arrowroot leaves (used to bail water)	Female
	Pole fishing (*kpìì njéènjè*)		Male
Others	Cut bushy tree		Male
	Make panier (*gíè*)		Female
	Thatching with palm leaves (*kpa-pèke*)		Male adolescent
	Make beds		Both adolescent
	Hut house repair		Female adolescent

Understanding the Forest as a Learning Environment

Baka children gain substantial knowledge from their daily forest activities. However, can the forest be considered a school? While the forest provides essential learning experiences, equating it to a school may oversimplify its role. Ambo's statement that "the forest is school" reflects his recognition of the extensive knowledge the forest can offer, yet focusing solely on this aspect may overlook its broader significance as a learning environment. One major difference between the forest and a school is the nature of the pedagogical relationship. In schools, this relationship is formalized with designated "teachers". In contrast, the pedagogical dynamics in the forest are more fluid and less structured.

I. The concept of "teaching is rare" in hunter-gatherer studies

What does it mean that the pedagogical relationship becomes less fixed in the forest? This question highlights the differences between forest and school environments. The point of departure for this discussion is the idea that "teaching is rare"[1] when studying hunter-gatherers' teaching and learning.

Hunter-gatherer caregivers do teach, but their methods are subtle. Boyette & Hewlett (2018) assert that "hunter-gatherers prioritize individual autonomy, such that signs of monitoring or evaluation by teachers may be quite subtle to avoid interfering with the autonomous learning process." They further explain that "hunter-gatherer foundational cultural schemas of autonomy and egalitarianism impact the nature of teaching. Adults and older children limit their interventions, and teaching episodes are generally brief, subtle, indirect, and typically at the level of actions and in the context of specific activities in which learners are already participating" (Boyette & Hewlett 2018: 20). Thus, research on child socialization in hunter-gatherer societies strongly associates the concept of "teaching is rare" with individual autonomy.

This perspective illuminates the link between pedagogical methods and social norms in hunter-gatherer societies. However, qualitative data on interactions between experts and learners is still limited, which impedes a comprehensive understanding of these relationships from the participants' viewpoints.

II. Situational, practical, and responsive teaching

An example from the forest illustrates the nature of the pedagogical relationship in hunting and gathering practices. In this context, Baka caregivers teach children in ways that are "situational", "practical", and "responsive". The characteristics of their teaching and its less fixed pedagogical relationships are discussed further.

First, teaching is considered "situational". It occurs in the field and is integrated into field practices. In the example of hunting a giant rat (*Cricetomys emini*, called *gbè* in Baka), as recorded in Sonoda (2016), Asama, a 7-year-old boy, was initially absent. During the hunt, Asama attempted to cut a tree branch to make a stick for hitting the rat. His father was positioned at a burrow, using smoke to weaken the rat. When his mother M discovered another burrow, she called Asama and instructed (Figure 1), "You come to stand!" (line 6) (the exchanges between M and Asama was shown below in Figure 2). This phrase, including *wòsolo* (to stand), reflects an instructional directive, guiding Asama on how to act in this situation. Notably, Asama was called after she summoned the adolescents. The mother first asked the adolescents to monitor the burrow (line 2), but when they were distracted, she then called Asama (line 5), demonstrating that his status was equivalent to that of the adolescents (Sonoda 2016: 115–116). Thus, the mother's instruction and Asama's status in the hunt are context-dependent, reflecting the situational nature of teaching.

Second, highlighting "practical" teaching, the burrow was real, meaning the rat might actually emerge. Asama was involved in actual hunting rather than mere

Figure 1 M asks Asama to keep watch on a burrow

practice.

Lastly, teaching is "responsive", as Asama joined the hunt because he prepared the hunting tool on his own initiative. His mother permitted his participation as he had demonstrated readiness without being asked.

III. The features of forest as a learning environment

The extracted characteristics of pedagogy in the forest facilitate an egalitarian relationship between the expert (in this case, the mother) and the learner (the child). This dynamic is influenced by the features of the forest as a learning environment. The forest presents unpredictable conditions, such as finding nuts in unexpected locations and observing unpredictable animal behaviors. Under these circumstances, experts often adopt the child's view (de-centering their own view), which allows the learner to gain attention more readily. Therefore, experts often attempt to understand what the learner has discovered, experienced, or heard in the forest, as this information may provide new insights. Thus, the pedagogical relationship becomes more fluid, fostering the development of relationships between practitioners.

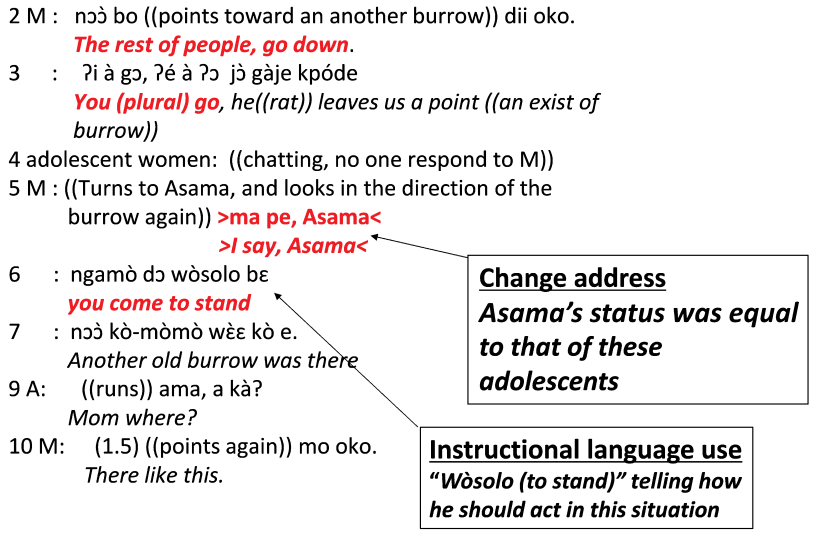

Figure 2 The exchange between M and Asama
Symbols used in transcripts are modified from Schegloff (2007).
((words)) Double parentheses enclose all material that is not part of talk being transcribed; for example, a comment by the transcriber showing that the talk was spoken in some special way, or a clarification of the meaning of an utterance.
>words< Talk between "more-than" and "less-than" symbols has been compressed.
(numbers) Numbers within single parentheses (e.g., (1.5)) mark silences in seconds and tenths of a second.

To better understand the characteristics of the forest as a learning environment, it is useful to compare it with a school setting. In classrooms, artificial objects like teaching materials and stationery are selected by the expert (teacher) and the learner observes both the expert and the objects. The learner performs tasks under the supervision of the expert, leading to a more fixed pedagogical relationship (Sonoda 2021).

IV. The role of personal experience in knowledge construction

Interestingly, this egalitarian relationship likely influences attitudes toward knowledge construction. Evidence suggests that knowledge construction is strongly linked to personal experience. Previous studies on hunter-gatherers have shown that knowledge about animal behaviors (Blurton Jones & Konner 1976), the use of medicinal plants (Hattori 2020), and food restrictions (Takeuchi 2013) are partly based on personal experience, indicating a lack of systematic knowledge. Each person's knowledge is uniquely built from their own experiences.

Additionally, Gallois et al. (2017) reported that Baka children develop their own knowledge about animals, with their Local Ecological Knowledge (LEK) showing specificity through expertise in specific categories, such as mice, fish, caterpillars, and mushrooms. This indicates the existence of a children's culture, which diminishes as they approach adulthood (Gallois et al. 2017: 75). The cur-

rent study demonstrates that children acquire LEK independently or within peer groups, provided they have access to the forest.

Apprent Paradox of Schooling

I now illustrate how people perceive schooling. Gallois et al. (2015) reported that Baka children have very limited school attendance, although schools specifically oriented toward Baka children have been established by institutions such as "Frères des Ecoles Chrétiennes" (F.E.C.) (Kamei 2001). The following is not a comprehensive survey; however, it offers crucial insights into how schooling affects the Baka community. I interviewed two Baka men, T and K, both fathers, in their homes, on March 8, 2012. These interviews were conducted in French and Baka. They discussed schooling based on their experiences. To convey their thoughts more clearly, I used free translation rather than word-for-word translation.

T: "We established a school a long time ago. But whenever you try to go to school, your brother always says, 'No, go fishing, go hunting with me.' You are torn in two."
K: "The school brings us 'wealth' (*lua*)."
T: "Even if you say you want to go to school to increase your 'intelligence' (*joma*), people around you make you drop out."
K: "If you do not have means (money), you cannot go to school."
T: "We are left behind 'the White people'. We know that you 'the White people' opened our eyes."
K: "'The White people' led us to the way."

(This interview was conducted in March 8, 2012.)

On the first point, the word "*joma*" is used concerning knowledge and skill. It literally means intelligence and knowledge and is derived from neighboring farmers (Brisson 2010). In Baka, there is another word related to knowledge and skill: "*nɔ̀là*", which means intelligence, know-how, ability, and dexterity, originating from Baka (Brisson 2010). Although "*nɔ̀là*" was not used here, it seems there is a clear distinction, with "*nɔ̀là*" being more practice-based. Additionally, K explains that "*joma*", what is taught and learned in school, brings wealth. "*Lua*" refers to goods, wealth, and money (Brisson 2010).

On the second point, the reality of being out of school has stigmatized the identity of socially vulnerable people. T and K emphasized that schooling was introduced by "the White people". Here, "White people" refers to "outsiders", including myself, not just Caucasians. They insist that they are left behind by outsiders. Their words immediately remind us of Paulo Freire's "pedagogy of the oppressed" (Freire 2005). Freire, a well-known educator and philosopher, criticized the banking concept of education, where students' creative power is minimized, forcing them to serve the interests of oppressors and making them easier to dominate. Instead of banking education, Freire advocated for libertarian education, which begins with resolving the teacher-student contradiction so that both

are simultaneously teachers and students (Freire 2005: 72–74). K and T also ironically highlighted the nature of banking education by using the term "*lua*" and criticized how the school system oppressed their community by saying, "we are left behind the White people."

Discussion: The Forest is More than School

This paper explored the nature of the forest as a learning environment and compared it with that of the school across multiple interrelated spheres: natural environment, pedagogical relationships, and educational discourse. The study of both practices and ideologies concerning teaching, learning, and schooling reveals that in the forest, pedagogical relationships are less fixed; rather, relationships between practitioners are developed. This contrasts with the school environment, where teachers tend to dominate students, and the school itself often imposes its authority on the community. Moreover, the forest offers learners the opportunity to acquire practical knowledge and skills for livelihood through personal experience, whereas the school is perceived to bring "wealth"—though it is almost impossible in reality. Clearly, the forest is not merely a school; it surpasses the school in allowing learners to learn at their discretion, with both expert and learner simultaneously becoming teachers and students.

However, the most significant issue is that teaching and learning environments outside of schools remain unnamed in academic studies. As a result, researchers tend to describe these environments using terms derived from school systems and schooling, even though the forest is fundamentally different from a school. Some typical examples are "chore curriculum" (Lancy 2015) and "everyday classrooms" (Lancy 2024). David Lancy, an anthropologist of childhood, states that "the term 'curriculum' conveys the idea that there is a discernible regularity to the processes whereby children attempt to learn, then master, and finally carry out their chores" (Lancy 2015: 20). This argument is useful in distinguishing between school curricula and other forms of learning. However, further discussion is necessary to determine whether chores are systematized and how these two forms of learning differ.

Thus, the notion of "forest is school" and "the school of [the] forest", as expressed by my informant, aligns with anthropologists' theories on education and learning. These metaphors are compelling because "everyone" understands what a school is. However, using schooling metaphors risks overshadowing the unique features of the forest as a teaching and learning environment, including its distinctive knowledge construction and the equal relationship between expert and learner. Researchers must continue to investigate learning environments outside of schools, which have yet to be adequately named.

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Note

(1) Lancy (2010, 2015) analyzed numerous ethnographic records from around the world and concluded that active teaching is extremely rare (Lancy 2010: 84). He noted, "contemporary definitions of teaching, education, and pedagogy emphasise the active and systematic intervention of a teacher whose goal is to change the behaviour of a learner. However, these terms derive from roots closer to 'correct', 'discipline', 'point', or 'raise up'." (Lancy 2010: 98). In many societies, children remain on the sidelines of their elders' affairs, quietly observing and learning from what they see. I agree with his argument, particularly in the context of hunter-gatherer societies.

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